AIR QUALITY FULL COMPLIANCE EVALUATION REPORT AS 46.14.515

Owner/Operator/Permittee:	BlueCrest Alaska Operating, LLC
Stationary Source Evaluated:	Cosmopolitan Project
Project Names:	Cosmopolitan Development Project
Air Quality Permit:	AQ1385MSS01; effective 06/09/15 AQ1385MSS01, Rev 1; effective 10/09/15; rescinded 3/17/16 AQ1385MSS01, Rev 2; effective 03/18/16; rescinded 9/28/16 AQ1385MSS01, Rev 3; effective 09/29/16; rescinded 5/1/17 AQ0982MSS02; effective 05/02/17
Location:	28615 Pathfinder Road Latitude 59°51'27.93" North Longitude: 151°48'13.68" Kenai Peninsula Borough, Alaska
Period Covered by Evaluation:	June 9, 2015 through September 30, 2017
Date of Onsite Visit:	August 1, 2017
Date of Report:	February 2, 2018
Evaluator:	Kolena Momberger, ADEC Inspector
Facility Representatives:	Larry Burgess, BlueCrest Alaska Operating, LLC
Weather Conditions During On-site Inspection:	Cloudy, 63°F, Winds S 0-5 mph

List of Abbreviations:

AAC..... Alaska Administrative Code
ACC..... Annual Compliance Certification
ADEC or Department.....Alaska Department of Environmental Conservation
AS..... Alaska Statutes
ASTM..... American Society for Testing and Materials
BACT..... Best Available Control Technology
bhp..... Boiler Horsepower
BlueCrest..... BlueCrest Alaska Operating, LLC
CATOX..... Catalytic Oxidation
C.F.R ..... Code of Federal Regulations
CH_2O ..... Formaldehyde
CO ..... Carbon Monoxide
CO_2e..... Carbon Dioxide Equivalent
dscf..... Dry standard cubic foot
EPA..... US Environmental Protection Agency
EU..... Emission Unit
°F ..... degrees Fahrenheit
FCE..... Full Compliance Evaluation
FITR..... Fuel Injection Timing Retard
FOR..... Facility Operating Report
gr/dscf..... grain per dry standard cubic foot (1 pound = 7000 grains)
gph ..... gallons per hour
HAPs..... Hazardous Air Pollutants [HAPs as defined in AS 46.14.990]
H_2S..... Hydrogen Sulfide
ICE ..... Internal Combustion Engine
ID..... Emission Unit Identification Number
kPa ..... kilopascals
kW..... kilowatt
lb/1,000 gal.....pounds per 1,000 gallons
lb/bhphr.....pounds per brake horsepower hour
lb/MMBtu.....pounds per million British thermal unit
MMBtu/hr ..... Million British thermal units per hour
MMscf/yr .....Million standard cubic feet per year
MMscf ..... Million standard cubic feet
MR&R..... Monitoring, Recordkeeping, and Reporting
MSS.....Minor Source Specific
NA .....Not Applicable
NESHAPs..... Federal National Emission Standards for Hazardous Air Pollutants [NESHAPs as contained in 40 CFR 61 and 63]
NO_X..... Nitrogen Oxides
NO_2 ..... Nitrogen Dioxide
NSPS.....Federal New Source Performance Standards [NSPS as contained in 40 CFR 60]
O & M .....Operation and Maintenance
O_2 .....Oxygen
ORL.....Owner Requested Limits
PM-10 .....Particulate Matter less with an aerodynamic diameter ≤ 10.0 microns
PM-2.5 .....Particulate Matter with an aerodynamic diameter ≤ 2.5 microns
ppm .....Parts per million
ppmv, ppmvd ...Parts per million by volume on a dry basis
ppmw .....Parts per million by weight
psia.....Pounds per Square Inch (absolute)
PSD .....Prevention of Significant Deterioration
PTE.....Potential to Emit
RICE.....Reciprocating Internal Combustion Engine
RMP .....Risk Management Plan
RO.....Responsible Official
RPM .....revolutions per minute
SIC.....Standard Industrial Classification
SO_2 .....Sulfur dioxide
TAR.....Technical Analysis Report
TPH.....Tons per hour
TPY.....Tons per year
ULSD.....Ultra Low Sulfur Diesel
VOC.....volatile organic compound [VOC as defined in 40 CFR 51.100(s)]
VOL.....volatile organic liquid [VOL as defined in 40 CFR 60.111b, Subpart Kb]
vol%.....volume percent
wt%.....weight percent

I. Evaluation Summary:

The Alaska Department of Environmental Conservation (the Department or ADEC) conducted an Air Quality Full Compliance Evaluation (FCE) of the BlueCrest Alaska Operating, LLC (BlueCrest), Cosmopolitan Project covering the period of June 09, 2015 through September 30, 2017. The purpose of the evaluation was to determine if the stationary source was in compliance with terms and conditions of Air Quality Minor Source Specific Permit Nos. (Permit) AQ1385MSS01, AQ1385MSS01, Revision (Rev) 1; AQ1385MSS01, Rev 2; AQ1385MSS01, Rev 3; AQ1385MSS02 and Alaska Air Quality Control Regulations. This FCE included a comprehensive review of records and files and was conducted with an on-site visit.

Based on the scope of this evaluation and review of information provided, the Department determined the stationary source to be out of compliance with Permit Nos. AQ1385MSS01, Conditions 21 and 25; AQ1385MSS01, Rev 2, Conditions 39, 9.1, 13, 14, 16, 17, and 26; AQ1385MSS01, Rev 3, Conditions 6.1, 9.1, 9.2, 9.3, 1.0, 11, 14, 15, 16, 21, 22, and 26; and AQ1385MSS02, Conditions 10.1 and 25.

II. Stationary Source Description:

BlueCrest is the owner/operator for the Cosmopolitan Project. BlueCrest is a developing oil and gas resource facility designed to process up to 20,000 barrels of oil per day, and produce up to 60 million cubic feet of gas per day (MMscf/day).

The Standard Industrial Classification (SIC) code for this stationary source is 1311 and North American Industry Classification System (NAICS) code 211111 Crude Petroleum and Natural Gas Extraction.

III. Emission Units:

The table below identifies the Emission Units (EUs) at the stationary source as authorized under the active permits.

Table 1 – Onshore Emission Unit Inventory

EU ID	Description	Make/ Model	Rating/Capacity	Fuel	NRE Status[a]	Date EU Fully Operational
Oil and Gas Processing Facility						
1a	2100 LP Compressor	CAT 3406TA	276 bhp	Natural/Fuel Gas [b]	No	7/25/16
1b	2100 LP Compressor	CAT 3406TA	276 bhp	Natural/Fuel Gas	No	7/25/16
1c	2100 LP Compressor	CAT 3406TA	276 bhp	Natural/Fuel Gas	No	NA
2	PF-2 Gas Compressor B w/CATOX controls	CAT 3608	2370 hp	Natural/Fuel Gas	No	7/25/16
3	PF-3 Gas Compressor Backup w/CATOX controls	CAT 3608	2370 hp	Natural/Fuel Gas	No	7/25/16
4	PF-4 Crude Oil Heater A	~~TBD~~Profire 2100E	4.5 MMBtu/hr	Natural/Fuel Gas	No	3/31/16
5	PF-5 Crude Oil Heater B	~~TBD~~Profire 2100E	4.5 MMBtu/hr	Natural/Fuel Gas	No	NA
6	PF-6 Crude Oil Heater Backup	BS&B ProFire 2100E	0.5 MMBtu/hr	Natural/Fuel Gas	No	3/31/16
7	Microturbine A	Capstone C600	600 kW	Natural/Fuel Gas	No	12/14/15
8	Microturbine B	Capstone C600	600 kW	Natural/Fuel Gas	No	12/14/15

EU ID	Description	Make/ Model	Rating/Capacity	Fuel	NRE Status[a]	Date EU Fully Operational
9	Microturbine C	Capstone C600	600 kW	Natural/Fuel Gas	No	NA
10	PF-10 Diesel Generator Backup	CAT XQ375	375 kW	Diesel	No	3/31/16
11	PF-11 Vapor Combustor	~~TBD~~ Abutec 20	~~49.8~~ 20.5 MMBtu/hr	Natural/Fuel Gas	No	4/19/16
12	TEG Reboiler [c]	~~TBD~~ BS&B	30 MMscf/day	--	No	3/31/16
13	PF-12a Low Pressure Flare	~~TBD~~ GBA Corona PF-4	27.3 MMBtu/hr	Natural/Fuel Gas	No	3/31/16
	PF-12b High Pressure Flare	~~TBD~~GBA Corona CSF-3/8-VSE	60 MMscf/day	Natural/Fuel Gas	No	3/31/16
48	Truck Loading Racks[d]	TBD	630,000 gal/day	NA	No	4/19/16
51	PF-6 Offspec Oil Tank Heater	BS&B ProFire 2100E	0.5 MMBtu/hr	Natural/Fuel Gas	No	3/31/16
TBD	TTLA Boiler	Burnham 810HE	0.505 MMBtu//hr	Natural Gas	No	**11/22/17**
Drill Rig Units						
15	ODR-1 Hot Air Heater 1	Dragon Fire	3 MMBtu/hr	No. 2 Fuel Oil Natural/Fuel Gas	No	11/29/16
16	ODR-2 Hot Air Heater 2	Dragon Fire	3 MMBtu/hr	No. 2 Fuel Oil Natural/Fuel Gas	No	10/20/17
17	ODR-3 Rig Engine 1	~~TBD~~ CAT 3512C	1476 hp	Dual Fuel [e]	**Yes**	10/22/16
18	ODR-4 Rig Engine 2	~~TBD~~ CAT 3512C	1476 hp	Dual Fuel	**Yes**	10/22/16
19	ODR-5 Rig Engine 3	~~TBD~~ CAT 3512C	1476 hp	Dual Fuel	**Yes**	10/22/16
20	ODR-6 Rig Engine 4	~~TBD~~ CAT 3512C	1476 hp	Dual Fuel	**Yes**	10/22/16
21	ODR-7 Rig Engine 5	~~TBD~~ CAT 3512C	1476 hp	Dual Fuel	**Yes**	10/22/16
22	ODR-8 Kohler Cold Start Engine	~~TBD~~ Yanmar	~~9.8~~ 10 hp	Diesel	**Yes**	10/22/16
49	ODR-9 Boiler 1	Hurst Power Flame	200 bhp	No. 2 Fuel Oil Natural/Fuel Gas	No	11/29/16
50	ODR-10 Boiler 2	Hurst Power Flame	200 bhp	No. 2 Fuel Oil Natural/Fuel Gas	No	11/29/16

Notes:
[a] EUs classified as non-road engines (NREs) must be installed and operated consistent with the definition of NRE at 40 CFR 89.2.
[b] Fuel gas will consist of field/feed gas after pretreatment to remove heavier hydrocarbons.
[c] Emissions from the electric TEG reboiler vent will be routed to the low pressure flare (EU ID 13).
[d] Emissions from the truck loading racks will be routed to the vapor combustor (EU ID 11).
[e] Engines identified as Dual Fuel will be capable of burning 100% diesel or a combination of diesel and natural/fuel gas.

Table 2 – Offshore Emission Unit Inventory

EU ID	Description	Make/ Model	Rating/Capacity	Fuel	NRE Status[a]	Date EU Fully Operational
Jack-Up Rig						
23	JU-1 Rig Engine 1	TBD	1100 hp	Diesel	Yes	NA
24	JU-2 Rig Engine 2	TBD	1100 hp	Diesel	Yes	NA
25	JU-3 Rig Engine 3	TBD	970 hp	Diesel	Yes	NA
26	JU-4 Rig Engine 4	TBD	970 hp	Diesel	Yes	NA
27	JU-5 Rig Engine 5	TBD	970 hp	Diesel	Yes	NA
28	JU-6 Rig Engine 6	TBD	970 hp	Diesel	Yes	NA
29	JU-7 Rig Engine 7	TBD	970 hp	Diesel	Yes	NA

EU ID	Description	Make/ Model	Rating/Capacity	Fuel	NRE Status[a]	Date EU Fully Operational
30	JU-8 Crane Engine 1	TBD	300 hp	Diesel	Yes	NA
31	JU-9 Crane Engine 2	TBD	285 hp	Diesel	Yes	NA
32	JU-10 Diesel Storage Tank	TBD	32,718 gal	NA	No	NA
33	JU-11 Diesel Storage Tank	TBD	28,896 gal	NA	No	NA
34	JU-12 Diesel Storage Tank	TBD	17,220 gal	NA	No	NA
35	JU-13 Diesel Storage Tank	TBD	17,220 gal	NA	No	NA
36	JU-14Temporary Well Testing Flare	TBD	15 MMscf/well location	Fuel Gas	No	NA
Well Service and Testing Equipment						
37	WST-1 Portable Boiler/Heater	TBD	1.0 MMBtu/hr	No. 2 Fuel Oil	No	NA
38	WST-2 Portable Boiler/Heater	TBD	1.0 MMBtu/hr	No. 2 Fuel Oil	No	NA
39	WST-3 Portable Boiler/Heater	TBD	1.0 MMBtu/hr	No. 2 Fuel Oil	No	NA
40	WST-4 Portable Boiler/Heater	TBD	1.0 MMBtu/hr	No. 2 Fuel Oil	No	NA
41	WST-5 Well Testing Engine	TBD	440 hp	Diesel	Yes	NA
42	WST-6 Well Testing Engine	TBD	440 hp	Diesel	Yes	NA
43	WST-7 Well Testing Engine	TBD	440 hp	Diesel	Yes	NA
44	WST-8 Well Testing Engine	TBD	440 hp	Diesel	Yes	NA
45	WST-9 Well Testing Engine	TBD	440 hp	Diesel	Yes	NA
46	WST-10 Well Testing Engine	TBD	440 hp	Diesel	Yes	NA
47	WST-11 Well Testing Engine	TBD	440 hp	Diesel	Yes	NA

Notes:
[a] EUs classified as non-road engines (NREs) must be installed and operated consistent with the definition of NRE at 40 CFR 89.2.

Table 3 – Onshore Well Servicing and Drilling Support Emission Unit Inventory

EU ID	Description	Make/Model	Fuel Type	Maximum Rating	NRE Status	Maximum Operation	Date EU Fully Operational
Well Servicing and Drilling Support Emission Units							
52	SPS Frac Pump	CAT 3512C	ULSD[2]	2,250 hp	Yes	2,400 hr/yr	4/10/17
53	SPS Frac Pump	Cummins QSKTA50-CE	ULSD	2,250 hp	Yes	2,400 hr/yr	4/10/17
54	SPS Frac Pump	Cummins QSKTA50-CE	ULSD	2,250 hp	Yes	2,400 hr/yr	4/10/17
55	SPF Frac Pump	CAT 3512B	ULSD	2,250 hp	Yes	2,400 hr/yr	4/10/17
56	SPF Frac Pump	CAT 3512B	ULSD	2,250 hp	Yes	2,400 hr/yr	4/10/17
57	SPF Frac Pump	CAT 3512B	ULSD	2,250 hp	Yes	2,400 hr/yr	NA
58	SPF Frac Pump	CAT 3512B	ULSD	2,250 hp	Yes	2,400 hr/yr	NA
59	SPF Frac Pump	CAT 3512B	ULSD	2,250 hp	Yes	2,400 hr/yr	NA
60	SPF Frac Pump	MTU Detroit	ULSD	2,250 hp	Yes	2,400 hr/yr	4/10/17
61	SPF Frac Pump	MTU Detroit	ULSD	2,250 hp	Yes	2,400 hr/yr	4/10/17
62	POD III Road	CAT C-10	ULSD	305 hp	Yes	2,400 hr/yr	4/10/17
63	POD III Deck	CAT 3176	ULSD	335 hp	Yes	2,400 hr/yr	4/10/17
64	Dry PCM	CAT C-13	ULSD	455 hp	Yes	2,400 hr/yr	4/10/17
65	Liquid Add	CAT C-7	ULSD	300 hp	Yes	2,400 hr/yr	4/10/17
66	Sand Chief	CAT C4.4	ULSD	120 hp	Yes	2,400 hr/yr	4/10/17
67	Sand Chief	CAT C4.4	ULSD	120 hp	Yes	2,400 hr/yr	4/10/17
68	Sand Chief	CAT C4.4	ULSD	120 hp	Yes	2,400 hr/yr	4/10/17
69	**~~MI(Mud) Pump~~ Portable Auxiliary Generator**	**CAT C18 (XQ600)**	**ULSD**	**831 hp**	**Yes**	**8,760 hr/yr**	**11/29/16**
70	**Various NRE**	**TBD**	**ULSD**	**4,694 hp**	**Yes**	**8,760 hr/yr**	**9/1/16**
71	Portable Heater 1	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	9/1/16
72	Portable Heater 2	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	9/1/16
73	Portable Heater 3	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	9/1/16

74	Portable Heater 4	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	9/1/16
75	Portable Heater 5	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	9/1/16
76	Portable Well Stimulation Heater 1	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	NA
77	Portable Well Stimulation Heater 2	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	NA
78	Portable Well Stimulation Heater 3	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	NA
79	Portable Well Stimulation Heater 4	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	NA
80	Portable Well Stimulation Heater 5	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	NA
81	Portable Well Stimulation Heater 6	TBD	ULSD	1.0 MMBtu/hr	No	8,760 hr/yr	NA

Notes:
1 Non-road engine, as defined under 40 CFR 89.2.
2 Ultra Low Sulfur Diesel.
3 To be determine

On December 4, 2017, ADEC requested verification of the EU inventory list. In the information request response letter dated January 5, 2018, the Permittee reported changes/updates to the EU inventory which are highlighted in blue font. (See Section: VIII. Records Researched for more details)

IV. Compliance Background:

This is the first FCE performed for this Permittee and Stationary Source.

V. State Standards:

AQ1385MSS01, AQ1385MSS02 Condition 6:

Visible Emissions (VE). The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from fuel burning units (excluding NREs), to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.

Findings: For EUs 10, 13 and 14, 15 and 16 VE observations were not required prior to the unit becoming functional if a certified manufacturer guarantee was provided. No manufacturer guarantee was provided, therefore the Permittee was to perform a Method 9 VE observation within 30 days of the unit burning liquid fuel after unit becomes fully operations.

The Permittee conducted Method 9 observations for EUs 10, 13, 14, 15 and 16 each resulting in 0.0 percent averaged over any six consecutive minutes. However, the VE observations for EUs 15 and 16 were not conducted within 30 days after the unit became fully operational. Any compliance action will be handled outside the scope of this FCE. (See Sections: X. Reports Reviewed, XI. Compliance Issues for more details) ***Non-Compliance***

AQ1385MSS01, AQ1385MSS02 Condition 7:

Particulate Matter (PM) Emissions. The Permittee shall not cause or allow PM emitted from all fuel burning units (excluding NREs) not to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

Findings: The Permittee verified during the on-site inspection that daily visual inspections are conducted. The Permittee has protocol in place to have a certified VE reader available if smoke is detected. BlueCrest also certified in the FORs, and confirmed during the on-site inspection that natural gas and Ultra-Low Sulfur diesel (ULSD) are used as their fuel sources. ***Compliance***

AQ1385MSS01, AQ1385MSS02 Condition 8:

Sulfur Compound Emissions. The Permittee shall not cause or allow sulfur compound

emissions, expressed as sulfur dioxide (SO_2), from all fuel burning units (excluding NREs) not to exceed 500 ppm averaged over three hours.

Findings: The Permittee verified during the on-site inspection that daily visual inspections are conducted; certified in the FORs that EUs (excluding NREs) are either natural gas fired or liquid fuel (diesel) fired fuel burning units; and taken fuel gas limits for the Flare. C***ompliance***

VI. Title I Permit Limits:

Alaska Ambient Air Quality Standard (AAAQS) Protection Requirements Conditions 9-13 include:

Onshore:

AQ1385MSS01 and AQ1385MSS02 Condition 9:

Annual NO_2; 24-hour PM2.5; 24-hour PM-10; and annual 24-hour, 3 hour, and 1 hour SO_2 AAAQS. The Permittee shall operate onshore equipment as described below:

Stack Configuration. Construct and maintain vertical, uncapped exhaust stacks for all EUs listed in permit except EUs 7-10 may use capped or horizontal releases.

Rig Engines. Limit the concurrent operation of EUs 17-21 to no more than four rig engines. Maintain records of start and stop times for each day of operation for each of the (EUs 17-21), and include copies of these records in the operating report.

Non-road Engines (NREs). The NREs operated onshore may be similar to or smaller than the equipment identified in Table 1. In all situations, the cumulative NRE rating shall not exceed 7,390 brake horsepower (bhp). Include in the operating report a list of all onshore NREs operated, associated ratings and cumulative NRE rating during the previous reporting period.

Findings: The Department determined that the Permittee was out of compliance with Condition 9 (See Sections: X. Reports Reviewed, XI. Compliance Issues for more details) as follows:

- EUs 1a and 1b were constructed and maintained with a horizontal exhaust stack configuration from date of installation July 25, 2016 until February 2017 when the Department discovered the non-compliance. The Permittee submitted photographs to the Department demonstrating the stack configuration was corrected as required in the permit. During the on-site inspection, all the listed onshore EU stack configurations were observed to be constructed/maintained as required in the permit.

- BlueCrest operated concurrently more than four rig engines (EUs 17-21) between July 2016 and May 1, 2017. BlueCrest submitted a permit application on March 20, 2017 as part of the corrective action, requesting to modify the permit condition such that five engines could be operated during periods of startup/shutdown. The Department granted the requested permit condition change with the issuance of the AQ1385MSS02 permit on May 2, 2017.

- According to Condition 9.3 of AQ1385MSS01 and AQ1385MSS02 permits, in all situations, the Permittee shall limit the cumulative NRE rating onshore to 7,390 bhp. In Table 1 Onshore EU Inventory of this FCE report, the total cumulative NRE rated capacity for

EUs 17-22 is 7,390 bhp. The Department found that the Permittee exceeded the NRE limit as follows:

- NRE equipment associated with contractors such as light plants; portable: heaters, generators, welders, air compressors; mobile crane; etc., total individual and cumulative ratings were not included in the FORs.
- NRE equipment associated with drilling/well-servicing (see Table 3) were brought on-site April-June 2017, with a total cumulative rating 24,645 bhp.
- The Department entered into a COBC to address NRE issues, assess civil penalties, require a permit application amendment, etc. (See Sections: X. Reports Reviewed, XI. Compliance Issues for more details)

Any compliance action will be handled outside the scope of this FCE. ***Non-Compliance***

AQ1385MSS01 and AQ1385MSS02 Condition 10:

Annual, 24-hour, 3, and 1 hour SO_2. The Permittee shall operate **onshore** equipment as described below:

Diesel Fuel Sulfur Content. Fire only liquid fuels with a sulfur content not to exceed 15 ppmw (ULSD) in all liquid-fired EUs authorized under this permit (including NREs).

a. Clearly label fuel tank(s) for the liquid-fired EUs as "USLD only".
b. For each shipment of fuel, keep receipts that specify fuel grade and amount.
c. Include copies of the records in the operating report.
d. Notify/report whenever the sulfur content of the diesel fuel burned in any EU exceeds the 15 ppmw.

Fuel Gas Sulfur Content. Fire only gaseous fuels with a sulfur content not to exceed 320 ppmv (20 grains/100 scf) in all EUs listed in Table 1 when operating on gaseous fuel.

a. Analyze a representative sample of the fuel gas semiannually to determine the sulfur content using either ASTM D4084, D5504, D4810, D4913, D6228, or GPA standard 2377, or a listed method approved in 18 AAC 50.035 (b)-(c) and 40 C.F.R. 60.17 incorporated by reference in 18 AAC 50.040(a)(1).
b. Keep records of the semiannual sulfur content analysis
c. Include copies of the records in the operating report
d. Notify/report whenever the fuel sulfur content exceeds the limit of 320 ppmv.

Findings: To meet permit requirements of the Diesel fuel and Fuel gas sulfur content the Permittee conducted and provided semiannual fuel gas sampling data using GPA standard 2377 as required in the permit in the FORs. The highest H_2S reading was 0.6 ppmv on May 4, 2016 which is below the 320 ppmv sulfur content limit. *Please note*: The Department was not able to confirm H_2S samples results were performed with non-expired equipment. (See VIII. Records Research, and IX. On-Site Inspection for more details)

The Permittee failed to include liquid fuel receipts and list with delivery date, fuel grade and fuel amount in the 2H16 and 1H17 FORs. BlueCrest provided revised FORs to include the missing data. Any compliance action will be handled outside the scope of this FCE. (See Sections: X. Reports Reviewed, XI. Compliance Issues for more details) ***Non-Compliance***

AQ1385MSS01, Rev 3 and AQ1385MSS02 Condition 11:

Annual NO_2; annual PM-2.5; annual SO_2. The Permittee shall comply with Condition 14.

Findings: The Department discovered calculation discrepancies which indicate the Permittee failed to comply with Condition 14. Any compliance action will be handled outside the scope of this FCE. (See Owner Requested Limits (ORLs) listed below for details of the discrepancies discovered.) ***Non-Compliance***

Offshore:

AQ1385MSS01, Rev 1, Rev 2 (Condition 11); AQ1385MSS01, Rev 3 and AQ1385MSS02 Condition 12:

Annual NO_2; 24-hour PM2.5; 24-hour PM-10; and annual 24-hour, 3 hour, and 1 hour SO_2 AAAQS. The Permittee shall operate offshore equipment as described below:

Offshore Drill Rig Equipment. The offshore drill rig equipment may vary from the equipment identified in Table 1. In all situations, the cumulative drill rig boiler/heater rating shall not exceed 11.0 million British thermal units per hour (MMBtu/hr), and the cumulative drill rig engine rating shall not exceed 13,595 horsepower (hp).

a. Include in the operating report a list of all drill rig equipment operated offshore during the previous review period. The list shall include associated ratings, the cumulative boiler/heater rating, and cumulative drill rig engine rating.
b. Notify/report whenever the cumulative ratings exceed the limit.

Offshore Well Servicing and Testing Equipment. The offshore well servicing and testing equipment may vary from the equipment identified in Table 2. In all situations, the cumulative well servicing and testing boiler/heater rating shall not exceed 4.0 MMBtu/hr, and the cumulative well servicing and testing engine rating shall not exceed 3,080 horsepower (hp).

a. Include in the operating report a list of all well servicing and testing equipment operated offshore during the previous review period. The list shall include associated ratings, the cumulative boiler/heater rating, and cumulative drill rig engine rating.
b. Notify/report whenever the cumulative ratings exceed the limit.

Offshore Well Servicing and Testing Equipment Per Well. Limit the operation of well servicing and testing equipment to a total of 4,435,200 horsepower-hours (hp-hr) per well per rolling 12-month period; and limit the operation of well servicing and testing boiler/heaters to a total of 5,760 MMBtu per well, per rolling 12-month period. These limits are cumulative for all EUs operating at wells less than 3.9 km from each other.

a. Monitor, record:
    i. well servicing and testing equipment maximum hp for each hour operated;
    ii. well servicing and testing boiler/heaters fuel consumed
b. Each month calculate and record
    i. total hp-hr of all operating well servicing and testing engines;
    ii. total MMBtu of all operating well servicing and testing boiler/heaters
    iii. If drill rig moves to a different well, record the date the rig moved, location of first well, and location of new well, and distance to the nearest 0.1 km between the first well and new well.
c. On monthly basis, calculate and record the cumulative 12-month rolling hp-hr for all well servicing and testing engines, and cumulative 12-month rolling MMBtu for all well servicing and testing boilers/heaters.
d. Include in the operating report data recorded, and notify/report whenever operations at any well exceed the limits.

Offshore Well Servicing and Testing Equipment per Location. The Permittee shall not operate the drilling rig within 2.5 km of the Tyonek Platform.

a. If operating within 5 km of the Tyonek Platform, record the well location and the distance to the nearest 0.1 km from the Tyonek Platform, and include data recorded in the operating report.
b. Notify/report if operate within 2.5 km of the Tyonek Platform.

AQ1385MSS01, Rev 1, Rev 2 (Condition 12); AQ1385MSS01, Rev 3 and AQ1385MSS02 Condition 13:

Annual, 24-hour, 3, and 1 hour SO_2. The Permittee shall operate offshore equipment as described below:

Fuel Gas Sulfur Content. The Permittee shall not allow the sulfur content of the fuel gas consumed by the well test flare (EU 36) to exceed 250 ppmv.

a. At least once after starting operations at any well location, measure the sulfur concentration of the fuel gas consumed by EU 36 using either ASTM D4084, D5504, D4810, D4913, D6228, or GPA standard 2377, or a listed method approved in 18 AAC 50.035 (b)-(c) and 40 C.F.R. 60.17 incorporated by reference in 18 AAC 50.040(a)(1).
b. Include copies of the records in the operating report
c. Notify/report whenever the fuel sulfur content exceeds the limit of 250 ppmv.

Diesel Fuel Sulfur Content. Fire only liquid fuels with a sulfur content not to exceed 15 ppmw (ULSD) in all liquid-fired EUs authorized under this permit (including NREs).

a. Monitor, record, and report in accordance with Condition 10.

Findings: The Permittee stated in the FORs, and confirmed during the on-site inspection, that no offshore emission units were installed, or operated under any BlueCrest permit. Until the Permittee installs, and/or operates offshore emission units, monitoring, recording, and reporting per Condition 10 is not applicable. ***Compliance***

Owner Requested Limits (ORLs) Limits to Avoid Prevention of Significant Deterioration (PSD) Permitting Under 18 AAC 50.306.

Onshore:

AQ1385MSS01, Rev 1, Rev 2 (Condition 13); AQ1385MSS01, Rev 3 and AQ1385MSS02 Condition 14:

Flared Gas Limit. The Permittee shall limit NOx, CO, PM, PM-10, PM-2.5, SO_2, and VOC emissions from EU 13 due to fuel gas consumed through the high pressure line to 2.1 tpy, 11.3 tpy, 0.6 tpy, 0.6 tpy, 0.6 tpy, 1.5 tpy, and 2.0 tpy respectively by limiting the cumulative fuel gas consumed by EU 13 through the high pressure line (formerly EU 14) to no more than 50 million standard cubic feet (MMscf) per rolling twelve-month period.

a. Install and maintain a non-resettable fuel gas flow meter on the high pressure line (formerly EU 14).
b. Record the fuel flow meter reading at the end of each calendar month
c. At end of each calendar month, calculate and record the total volume of gas consumed by the high pressure line during the previous calendar month and the cumulative fuel consumption during the previous 12-months.
d. Include copies of the records in the operating report.

e. Notify/report whenever the cumulative rolling 12-month fuel consumption calculated exceeds the limit.

Findings: The Permittee provided monthly and 12-month rolling total of volume of gas consumed by Flaring. However, the Department discovered calculation discrepancies between the 12-month rolling totals submitted in the 1H16, 2H16 and 1H17 FORs while preparing this FCE report. Department calculations indicate EUs 13/14 Flares exceeded the PSD ORL limit of no more than 50 MMscf per rolling 12-month period.

Table 4 – Total Volume of Gas Consumed

EU 14						
Year	**2015**		**2016**		**2017**	
Month	NA	NA	June	29.3 MMscf	NA	NA
Permittee 12-Month	NA	NA	December	37.51 MMscf	NA	NA
ADEC 12-month finding	ok	ok	**December**	**60.18 MMscf**	ok	ok
EU 13						
Year	**2015**		**2016**		**2017**	
Month	NA	NA	NA	NA	January	0.45 MMscf
12-Month	NA	NA	NA	NA	Feb/Mar	38.15 MMscf
ADEC 12-month finding	ok	ok	ok	ok	**February**	**60.82 MMscf**

Any compliance action will be handled outside the scope of this FCE. (See Sections: XI. Compliance Issues for more details) ***Non-Compliance***

AQ1385MSS01, Rev 1, Rev 2 (Conditions 14); AQ1385MSS01, Rev 3 and AQ1385MSS02 Conditions 15):

Carbon Monoxide (CO) Emission Limit. The Permittee shall limit the cumulative CO emissions from EUs 2 and 3 to no more 46 tpy by limiting the CO emission rate to no more than 1.0 g/hp-hr each. The Permittee shall operate and maintain consistent with manufacturer's specifications, catalytic oxidation (CATOX) emission controls on each of EU.

a. Verify initial compliance by conducting a source test for CO.
   i. Conduct source test within 180 (formerly 120) days of startup.
   ii. Conduct source test downstream of the CATOX control unit using applicable test methods as set in 40 C.F.R. 60, Appendix A.
   iii. During source test: perform three valid 1-hour runs; measure the inlet temperature and pressure drop across each CATOX; report test results within 60 days after completing the test(s); notify/report if source test results exceed the CO limit.
b. Obtain the manufacturer's specified operating range for the inlet temperature and pressure drop for each installed CATOX control to ensure compliance with the CO limit. Attach a copy of this information to the operating report for the period that covers the 30th day after the unit becomes fully operational.

Findings: The Permittee conducted a source test for both EUs 2 and 3 within 180 days. Results of the Source Test indicate these EUs passed, and are listed below in the Section: X. Reports Reviewed – Source Testing of this FCE report.

However, the Permittee failed to obtain and attach the manufacturer's specified operating range for the inlet temperature and pressure of each CATOX control device in the operating report (2H16

FOR) that covers the 30th day after the unit became fully operational which was in July 2016. Any compliance action will be handled outside the scope of this FCE. (See Sections: XI. Compliance Issues for more details) ***Non-Compliance***

AQ1385MSS01, Rev 1, 2 Condition 15:

Formaldehyde (CH_2O) Emission Limit. The Permittee shall limit the cumulative CH_2O emissions from EUs 1-3, 7-9 to no more than 8.7 tpy by limiting the CH_2O emission rate to no more than 0.08 g/hp-hr each. The Permittee shall operate and maintain consistent with manufacturer's specifications, CATOX emission controls.

a. Obtain the manufacturer's specified operating range for inlet temperature and pressure drop to ensure compliance with the CH_2O limit. Attach a copy of this information to the operating report that covers the 30th day after the unit becomes fully operational.
b. Conduct a source test for CH_2O within 120 days of startup of the representative unit.
    i. Conduct source test downstream of the CATOX control unit using applicable test methods as set in 40 C.F.R. 60, Appendix A.
    ii. During source test: perform three valid 1-hour runs; measure the inlet temperature and pressure drop across each CATOX; report test results within 60 days after completing the test(s); notify/report if source test results exceed the CH_2O limit.

Findings: The Permittee failed to obtain and attach the manufacturer's specified operating range for the inlet temperature and pressure of each CATOX control device in the operating report (2H16 FOR) that covers the 30th day after the unit became fully operational which was in July 2016. Any compliance action not already addressed, will be handled outside the scope of this FCE. (See Sections: XI. Compliance Issues for more details) ***Non-Compliance***

AQ1385MSS01, Rev 1, Rev 2 (Condition 16) CO and CH_2O Emission Limit; and AQ1385MSS01, Rev 3 and AQ1385MSS02 Condition 16):

CO Emission limit CATOX operating parameters. Install temperature sensing devices, to monitor the inlet temperature, and install gauges before and after the CATOX controls to monitor pressure drop across each installed CATOX unit.

a. Monitor engine exhaust temperature at the inlet to each CATOX unit at least once per hour during all periods of operation. Record for each calendar day the minimum and maximum inlet gas temperature of each CATOX unit. Report the minimum and maximum daily inlet gas temperature of each CATOX unit for each calendar month in the operating report.
b. Maintain the CATOX controls such that the pressure drop across each CATOX unit is within acceptable range identified in the manufacturer's specifications. If the pressure drop exceeds the acceptable differential identified in the manufacturer's specifications, the CATOX unit shall be inspected, cleaned, or replaced, as necessary.
c. Notify/report whenever the temperature or pressure drop across the CATOX is outside the acceptable range.

Findings: The Permittee failed to install, monitor, record, report, and maintain EUs 2 and 3 CATOX control devices (inlet temperature and pressure) to ensure compliance with the CO limit during the FCE review period. Any compliance action not already addressed will be handled outside the scope of this FCE. (See Sections: X. Reports Reviewed, XI. Compliance Issues for more details) ***Non-Compliance***

AQ1385MSS01, Rev 3 and AQ1385MSS02 Condition 17:

Volatile Organic Compound (VOC) Emissions. The Permittee shall reduce the organic vapors emitted to the atmosphere from the volatile liquid loading rack EU 48 operations by collection all organic vapors displaced during the loading of vapor laden delivery tanks and processing them through the enclosed vapor combustion system (EU 11).

a. Ensure EU 48 emits no more than 9.95 tons per year of VOCs by operating EU 11 as follows:
   i. Operate EU 11 at all times whenever volatile liquid is loaded at the loading rack in accordance with manufacturer's specifications.
   ii. EU 11 shall have a constant pilot flame whenever emissions may be directed to it. The pilot flame shall be continuously monitored by a thermocouple or equivalent device.
b. Monitor, Report and Record for EU 11:
   i. At least once each month in which truck loading operations occur, inspect EU 11 immediately prior to and during the first five minutes of a volatile liquid loading event. Ensure the correct sequence of operations takes place including the initial air purge, pilot light ignition, and opening of the vapor line valve. Keep records of monthly inspections.
   ii. Keep operating and maintenance log for EU 11 which includes:
   Incidents of malfunction, duration of event, probable cause, impact on emissions, and corrective actions; and inspection/maintenance activities, including any repair actions.
c. Provide a summary of the records in the operating report.

Findings: To meet ORL VOC permit requirements for EU 48/EU 11, the Permittee provided a summary of records required in the FORs, and verified during the on-site inspection that monthly operating/maintenance inspections are conducted, logs are kept, and procedures are in place to ensure the correct sequence of operations takes place when truck loading operations occur.

Please note: In the Permittee's FCE IR letter response dated January 5, 2018, the Department found the Permittee did not provide adequate documentation to demonstrate compliance. (See VIII. Records Research)

VII. Public Complaints:

During this FCE review period, the Department did not receive public complaints regarding this stationary source. The Permittee confirmed during the on-site inspection that no public complaints were received during the FCE review period.

VIII. Records Research:

On December 4, 2017, in accordance with 18 AAC 50.200 and AS 46.14.020(b), the Department requested the following information from the Permittee in order to complete this compliance evaluation. Following each item requested by the Department is the Permittee's response as provided in a Response Letter dated January 5, 2018:

1. Review, update (if necessary), and confirm that the stationary source address and contact information provided in the attached facility identification form (Attachment 1) for the Cosmopolitan Project, Permit No. AQ1385MSS02 is accurate and complete.

a. In addition, please provide the date when each EU became fully operational or operating status.

Response: *Permittee stated one change to the stationary source contact information occurred indicating Larry Burgess' title changed.*

Findings: The Permittee updated the source contact information as requested. C***ompliance***

2. Review and update, if necessary, the attached emission unit (EU) inventory spreadsheet (Attachment 2). The Department recognizes that this information may have been previously submitted with permit applications, however, the Department needs to verify the accuracy of information is has on file. If any information is not accurate, incomplete, or missing, please update accordingly, and notify the Department when responding to this information request.

Response: *Permittee stated the stationary source emission inventory spreadsheet was updated as requested.*

Findings: The EU inventory was updated and information provided as requested. C***ompliance***

3. Identify the blue building in Attachment 3, and equipment/stack associated with this building.

Response: *"The blue building identified in attachment 3 houses a small boiler, which is a natural gas fired Burnham 810He boiler with a maximum heat input rating of 0.0505 MMBtu/hr. The boiler has not been operated except for commissioning. The boiler is not listed in Permit AQ1385MSS02. The boiler will not be used until the revised minor air quality permit is issued, authorizing the use of the boiler. The boiler will be used to heat the cement slab under the Tank Truck Loading Area. Installing this boiler did not trigger minor permitting under 18 Alaska Administrative Code (AAC) 50.502. Emissions for the boiler are being incorporated into the updated air quality dispersion modeling for the 24-hour PM2.5 standard as an element of the minor air quality permit amendment application, which is anticipated to be submitted to ADEC on January 19, 2018".*

Findings: The Permittee provided a statement identifying the blue building and associated equipment/stack as requested; updated the stationary source emission unit inventory list to include this previously unlisted/unidentified emission unit; and provided an installation and fully operational date of 11/22/17. (See Table 1 of this FCE report, and Photo log numbers 57 and 114). The Department will address any applicable permitting requirements associated with the boiler outside the scope of this FCE.

The Department was not able to confirm/verify the installation/fully operational date of the boiler, during this FCE review period, and will need additional information to assist in determining compliance.

4. Does BlueCrest anticipate any upgrades, equipment modifications, and/or new construction for existing TDR's in the next 18 months? If yes, please explain.

Response: *"No upgrades, equipment modifications, or construction are currently planned on the drill rig for the next 18 months".*

Findings: The Permittee provided information as requested. C***ompliance***

5. Did any construction activities, or equipment modifications/installations occur at the stationary

source during the respective evaluation review period?

a. If so, include the construction start and stop date, list the EU identification number of the equipment involved, description of the modification, and quantify any emission increase or decrease if applicable.
b. In addition, the above information is still required if the equipment is considered insignificant unit.

Response: *"Any construction activities that occurred at the facility were authorized under Air Quality Minor Permits AQ1385MSS01 and AQ1385MSS02 with the exception of:*

- *The Burnham boiler as discussed in question 3.*
- *The well stimulation equipment for which an air quality dispersion modeling was conducted in March 2017 to demonstrate that potential emissions from the well stimulation equipment would not cause or contribute to a violation of the National and Alaska ambient air quality standards.*

Updated emission calculations will be submitted with the minor air quality permit amendment application, which is anticipated to be delivered to ADEC on January 19, 2018.

Installation of equipment occurred during June 9, 2015 through September 30, 2017 review periods. The installation dates for the equipment at the Cosmopolitan Project included in Permit AQ1385MSS02 are provided in Attachment 2.

A gasoline tank with a maximum capacity of 264 gallons was installed on December 20, 2016 for fueling mobile equipment."

Findings: The Permittee provided information as requested. C***ompliance***

6. Please verify H_2S sampling was performed/conducted with non-expired expired equipment.

Response: *"H_2S sampling was conducted using equipment that was not expired".*

Findings: During the onsite inspection conducted on August 1, 2017, the Department inspector requested to inspect the H_2S sampling equipment that the Permittee uses to sample H_2S as required by Condition 10.2 of permits AQ1385MSS01 and AQ1385MSS02. The Permittee produced for inspection a set of H_2S sampling equipment that had expired expiration dates. (See photo log – photos 116-117). BlueCrest later found/located a second set of H_2S sampling equipment which contained valid/current expiration dates (See photo log – photo 118-120). The Department was not able to confirm H_2S samples results were performed with non-expired equipment during the FCE review period. ***Non-Compliance***

7. Provide copies of calibration and installation of records for non-resettable gas flow monitoring devices during the review period.

Response: *"The requested records are provided in Attachment 4".*

Findings: To avoid PSD permitting per Permit Nos. AQ1385MSS01, Rev 1, Rev 2, Condition 13; AQ1385MSS01, Rev 3 and AQ1385MSS02 Condition 14, a non-resettable fuel gas flow meter was required to be installed and maintained on the Flare EU 14/13 high pressure line, and required that flare gas be limited to no more than 50 million standard cubic feet (MMscf) per rolling twelve-

month period. In addition, most of the onshore stationary source EUs are natural gas fired; and have some kind of gas/fuel flow monitoring mechanism.

Although calibration records were provided in attachment 4, the Department was not able to identify which EU ID, make/model or piece of equipment as authorized in Section 1 of the Department issued permits, and/or Table 1 of this FCE report these records related to.

The Department finds the Permittee did not provide adequate documentation to demonstrate compliance for installation, calibration, and maintenance for Emission units requiring non-resettable gas flow meters. ***Non-Compliance***

8. Provide copies of calibration records for the flare temperature, and installation/maintenance records for the flare thermocouple.

Response: *"The Vapor Combustor, EU 11, flare thermocouple was calibrated at the factory. Per manufacturer specifications, field calibration is not recommended, and calibration should only be conducted in the field if the door or terminal was replaced in the field or if the system is very old and has drifted out of calibration. The vapor combustor was manufactured in November 2015".*

Findings: BlueCrest has two types of Flaring devices. One is a Vapor Combustion Unit (VCU) EU 11, and the other is EU 13 Flares for the low and high pressure lines.

To monitor pilot flame, and temperature, a thermocouple or equivalent device is typically used, which requires calibration, installation, and on occasion replacement.

- EU 14/13 Flare pilot flame and temperature monitoring are not required in the Department issued Air Quality Permits at this time.
- EU 11 is to be operated according to manufacturer's specifications, and require the pilot flame to be continuously monitored by a thermocouple or equivalent device per Condition 17.1b of AQ1385MSS01, Rev 3 and AQ1385MSS02.

Although calibration records were provided in attachment 4, the Department was not able to identify which EU ID, make/model or piece of equipment as authorized in Section 1 of the Department issued permits, and/or Table 1 of this FCE report these records related to.

The Department finds the Permittee did not provide adequate documentation to demonstrate compliance for installation, calibration, and maintenance for these Emission units.
Non-Compliance

9. Submit a list of equipment (including non-road engines (NREs) that require gasoline/liquid propane/diesel as liquid fuel (that is not already included in the AQ1385MSS02 permit), along with associated engine rating.

Response: *"Please see Attachment 3 for the list of additional equipment, including NREs, that is not included in the Permit AQ1385MSS02 emission unit inventory. In addition, the equipment in the Onshore Well Servicing and Drill Support Emission Units Inventory identified in Table 3 of Attachment 2 is not currently listed in Permit AQ1385MSS02. These emission units were included in the minor air quality permit application submitted to ADEC on September 13, 2017".*

Findings: Per Condition 9.3 of Permit Nos. AQ1385MSS01 and AQ1385MSS02, the NRE equipment list provided by the Permittee as requested, included NRE not previously reported in the FORs, and demonstrate the NRE limit of 7,390 hp was exceeded. In addition, the Department was not able to verify if the NRE list provided in the FCE IR response letter dated January 5, 2018, was true and accurate due to discrepancies found between these lists and electronic NRE records viewed during the onsite inspection on August 1, 2017. ***Non-Compliance***

10. Submit a list of all drill rig and mud pump NRE emission units operated onshore during the period of July 2017 through September 30, 2017. Please include associated ratings and the cumulative drill rig and mud pump NRE rating.

    Response: *"Please see Table 1, below, for a list of the Drill Rig NREs and mud pump NRE with the associated rating for each NRE. The cumulative NRE rating is also provided in Table 1." "Notes: 1. Only four of the five Drill Rig NREs, EU IDs 17 through 21, were operated concurrently as required per Permit AQ1385MSS02, during the period of July 2017 through September 2017".*

    Findings: Per Condition 9.3 of Permit Nos. AQ1385MSS01 and AQ1385MSS02, the NRE equipment list provided by the Permittee included the Drill Rig Engines (EUs 17-22) and Mud pump (EU 69 Mud Pump/Auxiliary generator). EU 69 has a rated capacity of 831 bhp, and became operational November 29, 2016. The combined total cumulative rating of EUs 17-22, and 69 is 8,221 bhp, which exceeds the onshore NRE limit of 7,390 horsepower (hp). ***Non-Compliance***

11. Submit a list of all well servicing emission units operated onshore during the period of July 2017 through September 30, 2017. Please include associated ratings and the cumulative well servicing NRE rating.

    Response: *"No frac units or other well servicing equipment was operated between July 2017 and September 30, 2017".*

    Findings: Table 3 Onshore Well Servicing and Drilling Support, attached in Section I of this FCE report includes EUs 52-81. Even though EU 69 (Mud Pump) and EU 70 are listed in this group, and may have operated during the July through September 2017 time period; they are currently considered "Other NRE" per the COBC Appendix A, executed on October 6, 2017, in which NRE are listed in three categories: Drill Rig NRE, Well Servicing NRE, and Other NRE. Therefore, the Permittee's statement regarding frac units or other well servicing equipment is considered accurate. ***Compliance***

12. Submit a list of all other NRE emission units operated onshore during the period of July 2017 through September 30, 2017. Please include associated ratings and the cumulative other NRE rating.

    Response: *"Please see Table 2, below, for the list of all other NRE emission units operated or onsite during the period of July 2017 through September 2017. The associated ratings for each NRE and the cumulative other NRE rating are provided in Table 2". "Notes: 1. The mud pump EU 69, is an NRE that provides supplemental power to various types of equipment at different locations at the onshore facility. The mud pump generator is not associated with the drill rig NRE, therefore should be accounted under Other NREs".*

    Findings: Per Condition 9.3 of Permit Nos. AQ1385MSS01 and AQ1385MSS02, the

Permittee included a list of "Other" NRE operated or onsite from July – September 2017, indicating a total cumulative NRE rating of 1,298.3 bhp which were not previously reported in the FORs, and demonstrate the NRE limit of 7,390 hp was exceeded.

In addition, the Department was not able to verify if the NRE list provided in the FCE IR response letter dated January 5, 2018, was true and accurate due to discrepancies found between these lists and electronic NRE records viewed during the onsite inspection on August 1, 2017. ***Non-Compliance***

13. Please provide copies of inspections and maintenance performed for EUs 2 and 3, including the CATOX control devices for those units, from December 15, 2016 through September 15, 2017.

    Response: *"The requested records are provided in Attachment 4".*

    Findings: Permittee provided inspections and maintenance records as requested. ***Compliance***

14. Please provide copies of the monthly inspection/maintenance activities for EU 11 from January 2017 through September 2017.

    Response: *"The requested records are provided in Attachment 4".*

    Findings: The Permittee provided monthly inspection records for EU 11. However, the Department was not able to determine if the inspection occurred immediately prior to and during the first five minutes of a volatile liquid loading event, if any routine repairs or preventative maintenance was performed, and was not able to ensure the Permittee followed the correct sequence of operations such as initial air purge, pilot light ignition, and opening of the vapor line valve as required by condition 17.2 of AQ1385MSS01, Rev 3 and AQ1385MSS02.

    The Department finds the Permittee did not provide adequate documentation to demonstrate compliance. ***Non-Compliance***

15. Submit copies of the Visible Emission certificate of training for each person that conducted a Method 9 observation during the review period July 2015 through June 2017 that have not already been provided to the Department.

    Response: *"All VE certificates of training for each person that conducted a Method 9 observation during the review period were provided to ADEC in the 1H16 and 1H17 Facility Operating Reports".*

    Findings: The Permittee provided information as requested. C***ompliance***

16. Submit copies of federal emission standards; wavier(s); record keeping, monitoring, performance testing; or other reporting requirements such as NSPS Reports submitted to EPA that have not already been submitted to the Department.

    Response: *"The initial annual report for a well affected facility and the initial semi-annual report for a process unit affected facility under 40 Code of Federal Regulations (CFR) Subpart OOOOa were submitted to the U.S. Environmental Protection Agency (EPA) on October 31, 2017. Copies of the Subpart OOOOa reports are provided in Attachment 4. All other reports that have been submitted to EPA also have been submitted to the Department".*

Findings: The Permittee provided information as requested. C***ompliance***

17. Please explain the process BlueCrest uses to document/log EE/PDs.

Response: *"BlueCrest reviews the facility operating data monthly to determine compliance with the effective air quality minor permit conditions. During the review of the operating data, if an EE/PD concern is raised, BlueCrest uses the EE/PD documentation process as follows:*

- *Review monthly operating data,*
- *Investigate the EE/PD,*
- *Sign and submit the EE/PD form,*
- *Log information into the EE/PD table,*
- *Place an electronic copy of the EE/PD on the server, and*
- *Implement corrective action to prevent additional EE/PDs from occurring".*

Findings: The Permittee provided the information as requested. However, the Department discovered inconsistencies between the Department's and Permittee EE/PD records, and EE/PD reports were not submitted in a timely manner. Condition 20 of Permit No. AQ1385MSS01, Condition 21 of Permit Nos. AQ1385MSS01, Rev 2, Rev 3 and AQ1385MSS02 require the Permittee to report all emissions or operations that exceed or deviated from the requirements of the permit. Therefore, the Department finds the Permittee out of compliance. (See Section IX On-Site Inspection EE/PD Reports, and Section XI. Compliance Issues for more details)
Non-Compliance

IX. On-Site Inspection:

ADEC Air Compliance Program Inspectors Kolena MOMBERGER and Daniela FAWCETT conducted an on-site inspection for BlueCrest, Cosmopolitan Project located near Anchor Point, AK on August 1, 2017.

The following is a summary of the inspection:

Inspection.
August 1, 2017: MOMBERGER and FAWCETT arrived at BlueCrest at approximately 9:40 am Alaska Standard Time (AST).

Weather conditions: Cloudy; temperature 63 degrees Fahrenheit (°F); wind gusts from the South (S)/Southwest (SW) 0-5 mph.

Stationary Source Representatives.
Jackie Rose, BlueCrest – Regulatory Permitting and Compliance Coordinator
Larry Burgess, BlueCrest – HSE Manager
Garret Potter, BlueCrest – HSE onsite
Mike Graves, BlueCrest – Lead Production (Ops lead)
Scully (Nick) Schematic, BlueCrest – Production Operations
Ann Mason, SLR – Senior Scientist

Opening Conference.

August 1, 2017: An opening conference was held in the BlueCrest HSE office. Present were MOMBERGER and FAWCETT from ADEC; and the following representing BlueCrest: Jackie ROSE; Garret POTTER; and Ann MASON.

MOMBERGER and FAWCETT presented their credentials, and both exchanged business cards with BlueCrest representatives. MOMBERGER described the scope of the inspection, obtained consent to take on-site photographs during the inspection, inquired if "hot" work permits would be necessary, and explained that the inspection would entail a physical inspection of each permitted EUs listed in the BlueCrest applicable Air Quality Control Permit(s), and would include a review of operational practices, records, logs, appropriate to determine compliance with the terms and conditions of the permit.

MOMBERGER explained the objective of the records request, and scope of information necessary to complete the records review, and timeline for completion of report.

MOMBERGER interviewed BlueCrest representatives regarding Method 9 Visible Emissions; Asbestos; Halon; Refrigerants; Engines; Maintenance/Operation records/logs; Fuel Usage and types; source test(s); Operating hours; excess emission or permit deviation logs; complaint log; equipment inventory changes, upgrades, modifications; insignificant equipment; and construction activities.

During the initial approach to the facility, no appreciable VEs were observed from any emission source.

A walk through of the onshore facility was completed to verify each EU listed on the operating permit inventory.

a. ROSE, MASON, BURGESS, Mike GRAVES, and Scully (Nick) SCHEMATIC, escorted MOMBERGER and FAWCETT throughout the facility.
    i. Began with main gas outlet, walking along perimeter fence line, Drill Rig EUs: 49, 50, 17-21, 16, 15, 22; then Oil and Gas Processing Facility EUs: 11, 48, 51, 6, 4, 5, 10, 7-9, 12, 2, 3, 1b, 1a, 13; concluded with records review.

        Note: No offshore EUs were operated or present during the FCE reporting period.

Photographs of EUs including identifying data plates, hour meters, and fuel meters were taken when possible; and all EUs appeared to be maintained and in good operating condition.

> Note: During onsite investigation, BlueCrest representative Larry Burgess notified the Department that BlueCrest was actively working on resolving facility wide H_2S safety standard issues.

Emissions.

- **a. Sight** – No VEs were observed during the on-site inspection using Smoke/No Smoke observations.
    1. No leaks or holes were observed in fuel burning equipment, ductwork or expansion joints.
    2. No evidence to indicate removal of asbestos containing materials at time of inspection. BlueCrest representatives stated there are no Known asbestos areas at the Source.
- **b. Smell** – Odor was detected as follows:
    1. Fuel gas odor was present at EU 3, which was down for maintenance, and crew actively working on it.
    2. No other odors noted that suggested uncontrolled emissions of hydrocarbons (HCs).

c. **Sound** – No sounds that would indicated leaking pipes, fittings, or valves.

Monitoring.

a. **Hour meters** – Photographed and verified meters installed as required by permit.
   1. Hour limits are monitored using hour meters which are located on/near the emission unit.
   2. Hours are tracked via physical records and then entered into the database system.
b. **Fuel meters** – Photographed and verified those that were required by permit.
   1. Fuel usage data is monitored using fuel meters.
   2. Fuel usage data is collected by hand and entered into the database.
   3. Fuel purchases/delivery receipts and fuel analysis records are kept and provided in FORs.
c. **VE –** BlueCrest representatives stated if VE readings are required, Reference Method 9 and smoke/no smoke methods will be used by certified staff or certified contractor.

Records Inspection.

a. **Operations/Maintenance** – Reviewed and verified.
   1. Maintenance records – BlueCrest provided all requested records.
   2. Hours operated – hour meter readings were verified and photograph taken of daily report.
   3. A review of Maintenance procedures and records was performed.
b. **Fuel** – Reviewed and verified.
   1. Ultra-low sulfur diesel (USLD) is supplied by barge. Fuel receipts, certifications, lab analysis are obtained and kept either at the facility or Anchorage office, which are then incorporated into the FORs as necessary.
   2. A Sulfur fuel analysis is conducted by fuel supplier; copies were available for review.
c. **EE/PD Reports** – Reviewed.
   1. BlueCrest provided a copy of the EE/PD log during the onsite inspection. At time of onsite inspection, the Department had received 8 EE/PDs. While preparing this FCE report, the Department discovered discrepancies between the Permittee's and Department's EE/PD records. (See Section XI. Compliance Issues for more details) ***Non-Compliance***
d. **Complaint Log** – Reviewed and verified.
   1. BlueCrest stated no Air Quality related complaints were received, reported, or submitted for the FCE review period.
e. **Construction Activities** – Reviewed and verified.
   1. BlueCrest stated that they began operations during the review period, and do not plan on any construction activities in the near future.

Closing Conference.

A closing conference was held in the BlueCrest control room conference room. Present were MOMBERGER, FAWCETT, ROSE, BURGESS, POTTER, and MASON. MOMBERGER summarized her findings and observations during the on-site inspection, and stated the FCE report will be issued pending final review.

MOMBERGER and FAWCETT departed BlueCrest at approximately 6 pm AST.

X. Reports Reviewed:

Permit Nos. AQ1385MSS01 (6/9/15-10/8/15), AQ1385MSS01, Revision (Rev) 1 (10/9/15-3/17/16); AQ1385MSS01, Rev 2 (3/18/16-9/28/16); AQ1385MSS01, Rev 3 (9/29/16-5/1/17); AQ1385MSS02

(5/2/17 – to present) all require submittal of Air Quality Permit reports. The Department has received and reviewed during this FCE review period the following reports:

Table 5 – Reports

Report Type		Postmark Date	Received Date	Review Finding	Notes
AQ1385MSS01 thru Rev 1, 2, and 3					
FOR	06/09/2015-06/30/2015	03/03/2016	03/07/2016	**Violation**	
FOR	07/01/2015-12/31/2015	01/28/2016	02/01/2016	In Compliance	0, Rev 1
Equipment Modification Notification		01/07/2016	01/11/2016	In Compliance	Rev 1
Change of Responsible Party		03/02/2016	03/07/2016	In Compliance	Rev 1
FOR	01/01/2016-06/30/2016	08/01/2016	08/04/2016	In Compliance	Rev 1, 2
Emission Fee Estimate	06/09/2015-12/31/2015	03/30/2016	04/01/2016	In Compliance	0, Rev 1
NSPS Startup Notification		04/29/2016	05/02/2016	In Compliance	Rev 2
FOR	07/01/2016-12/31/2016	01/30/2017	02/01/2017	In Compliance	Rev 2, 3
Source Test Plan		08/25/2016	08/29/2016	In Compliance	Rev 2
NSPS Semi-Annual Report		08/26/2016	08/31/2016	In Compliance	Rev 2
Source Test 10-day Notification		09/23/2016	09/26/2016	**Violation**	Rev 2
Source Test Report			10/31/2016	In Compliance	Rev 2/3
Source Test Plan			12/13/2016	In Compliance	Rev 3
Source Test 10-day Notification		12/30/2016	01/03/2017	In Compliance	Rev 3
Source Test Report		02/16/2017	02/21/2017	In Compliance	Rev 3
NSPS Semi-Annual Report		03/13/2017	03/15/2017	In Compliance	Rev 3
Emission Fee Estimate	01/01/2016-12-31/2016	03/30/2017	03/30/2017	In Compliance	Rev 1, 2, 3
FOR	01/01/2017-05/01/2017	07/21/2017	07/24/2017	**Violation**	Rev 3
AQ1385MSS02					
FOR	05/02/2017-06/30/2017	07/21/2017	07/24/2017	**Violation**	
Emission Fee Estimate	01/01/2016-12-31/2016	03/30/2017	03/30/2017	In Compliance	
Permit Specific – Notification of Change in Manufacturing Specifications for EUs 2 & 3		05/26/2017	05/30/2017	In Compliance	
Construction Notification 40 CFR 60 Subpart OOOOa		09/12/2017	09/14/2017	In Compliance	

EE/PDs.

Permit Nos. AQ1385MSS01, Rev 1, 2, 3 and AQ1385MSS02 require the Permittee to report all emissions or operations that exceed or deviate from the requirements of the permit.

Table 6 – EE/PDs

AQ1385MSS01							
#	Postmarked	Date Discovered	EU	Event Date	Conditions	Description	Corrective Action
1	09/23/2016	09/23/2016	1a, 1b, 2, & 3	09/16/2016	Rev 2: 39 and 26	Failed to Submit Source Test 10-day Notification in Timely Manner	BlueCrest submitted the 10 day Source Test Notification along with the Permit Deviation. BlueCrest stated they are setting up a task notification system for all future source testing requirements. Any compliance action will be handled outside the scope of this FCE.
2	10/26/2016	09/28/2016	2 & 3	07/25/2016 – on going	Rev 2: 14, 16, 17 & 26 Rev 3: 15, 16 & 26	Failure to Install, monitor, record & report CATOX sensors for EUs 2 & 3	The Department issued Compliance letter No. 17-R0474-37-000 1 dated 03/20/2017, Enforcement, was sent requiring installation documentation for each EU CATOX; daily inlet gas temperature readings 01/01-01/30/17; report any exceedances; submit hours of operation for each EU 07/25/16 – 01/25/17. Related PDs see Nos. 4, 9, 12 EUs 2 & 3 operational 7/25/16. On 9/28/17 when engines were to be source tested BlueCrest discovered the CATOX sensors were not installed, and no monitoring, recording, or reporting was conducted. At time of submittal of Permit Deviation, installation of the CATOX sensors was not known. Any compliance action will be handled outside the scope of this FCE.
3	03/21/2017	02/15/17	1a & 1b	Date of install to 2/21/17	Rev 3: 9.1 & 26	Failed to Install stacks as required	During review of Source Test Observation photos ADEC discovered 1a & 1b stack configuration was horizontal instead of vertical as required in the permit. The Department notified the Permittee via phone/email on 2/15/17. Stack configuration was corrected by 02/21/17; and permit deviation submitted in March 2017. Any compliance action will be handled outside the scope of this FCE.
4	03/28/2017	02/21/17	2 & 3	01/04-02/09/17	Rev 3: 16 & 26	Failure to monitor, record & report CATOX sensors data for EUs 2 & 3	The Department issued Compliance letter No. 17-R0474-37-000 1 dated 03/20/2017 On January 4, 2017 the pressure and temperature sensors were installed as required in Condition 16. On February 9, 2017, the database program/memory storage was inadvertently reset resulting in all recorded CATOX sensor data being lost. Data from the performance test conducted on January 12, 2017 indicated the average inlet temperature readings and average pressure drops

							were within the manufacturer's recommended ranges. Corrective Action included personnel training, reconfiguring the database system, and having an independent back-up server. Related to this PD see Nos. 2, 9, 12 Any compliance action will be handled outside the scope of this FCE.
5	03/28/2017	02/21/2017	17-21 and NREs		Rev 3: 9.2, 9.3, 22 & 26	Failure to Monitor, record, report and submit in 2H16 FOR: start/stop times for each day EUs 17-21 operated for month of November; Failure to operate EUs 17-21 within operating limit Failed to record and report list of all NRE's operated onshore during previous reporting period.	The Department issued Compliance letter No. 17-R0495-37-0001 dated 04/07/2017, requiring a revised 2H16 FOR, and Startup/shutdown information. Corrective Action included developing an air quality environmental management system, revising the 2H16 FOR, Meeting with ADEC Permit Writing and Compliance staff, permit application submitted 3/20/17 to modify condition 9.2 so that 5 engine can operate concurrently during startup/shutdown process. Related PDs see Nos. 6, 8 MASTER Case Closed on 06/30/17. Any further compliance action will be handled outside the scope of this FCE.
6	03/28/2017	02/21/2017	17-21	11/05-11/30/16	Rev 3: 9.2a & 26	Failure to operate EUs 17-21 within operating limit	The Department issued Compliance letter No. 17-R0495-37-00010 dated 4/07/2017, requiring a revised 2H16 FOR, and Startup/shutdown information. Corrective Action included developing an air quality environmental management system, revising the 2H16 FOR, Meeting with ADEC Permit Writing and Compliance staff, permit application submitted 3/20/17 to modify condition 9.2 so that 5 engine can operate concurrently during startup/shutdown process. See Related PDs see Nos.5, 8 Master Case Closed on 06/30/17. Any further compliance action will be handled outside the scope of this FCE.
7	03/28/2017	02/21/17	15 & 16	12/05/16 – 03/10/17	Rev 3: 6.1 & 26	Failure to obtain/submit certified manufacturer's guarantee **OR** Conduct a Method 9 VE observation within 30 days of becoming fully operational	The Department issued Compliance letter No. 17-R0494-37-0001 dated 04/07/2017, requiring documentation regarding EUs 15 and 16. Corrective Action included Performing the VE for EU 15 on 3/10/17. EU 16 was down for maintenance; training personnel on permit requirements and VE observations. Case Closed on 06/30/17.
8	03/28/2017	03/20/17	17-21	12/29/16 and 02/07/17	Rev 3: 9.2 & 26	Failure to operate EUs 17-21 within operating limit	The Department issued Compliance letter No. 17-R0495-37-0001 dated 04/07/2017, requiring a revised 2H16 FOR, and Startup/shutdown information. Corrective Action included developing an air quality environmental

							management system, revising the 2H16 FOR, Meeting with ADEC Permit Writing and Compliance staff, permit application submitted 3/20/17 to modify condition 9.2 so that 5 engine can operate concurrently during startup/shutdown process. See Related PDs see Nos.5, 6 Case Closed on 06/30/17. Any further compliance action will be handled outside the scope of this FCE.
9	05/26/2017	05/11/17	2 & 3	02/10-04/13/17	Rev 3: 16 & 26	Failure to operate, maintain CATOX within Manufacturer's recommendations and parameters established during source testing	The Department issued Compliance letter No. 17-R0474-37-0001 dated 03/20/2017, Related PDs see Nos. 2, 4, 12 Pressure transducer tubing for sensors were collecting water condensation and freezing the line. Corrective Action included blowing out the lines and installing drains to prevent condensation from building up in the lines. BlueCrest is working with manufacturer to create and implement an inspection/maintenance checklist, as well as including periodic checks by operators to ensure the drains are functioning on a regular basis.
10	06/30/2017	03/16/17	NRE	04/10 – 5/16/17	Rev 3: 9.3 and 26	Late Reporting, and Failure to operate NREs below 7390 horsepower limit	COBC Enforcement Tracking No. 17-R0739-50-0001, became effective 10/06/17. Conditions within Appendix A will remain in effect until the permit application submitted on 9/13/17 is reviewed and permit issued by ADEC. Actual COBC will remain in effect at least 2 years from date of signing which was on 10/6/17. Corrective Actions include: Providing a list of ALL NREs in the operating permit under Condition 22; Providing/submitting a permit application on 9/13/17 with modeling demonstration; Agreeing to terms and conditions of the COBC. COBC compliance action will be handled outside the scope of this FCE.
11	07/21/2017	06/30/17	17-21	03/24, 04/08, and 05/01/17	Rev 3: 9.2, 21 & 26	Failure to operate EUs 17-21 within operating limit Failure to Submit EE/PD in timely manner per Condition 21	The Department issued Compliance letter No. 17-R0495-37-0001 dated 04/07/2017. The Case was closed on June 30, 2017. Between March 29 and June 30, 2017 no EE/PDs were received by the Department. Corrective Action included permit application submitted 3/20/17 to modify condition 9.2 so that 5 engine can operate concurrently during startup/shutdown process. Problem resolved with issuance of AQ1385MSS02 Permit (Effective May 2, 2017)

							Any further compliance action will be handled outside the scope of this FCE.
12	07/21/2017	04/07/17	2 & 3	02/10-06/24/17	Rev 3: 16, 21 & 26	Late Reporting, and Failure to operate, maintain CATOX within Manufacturer's recommendations and parameters established during source testing Failure to Submit EE/PD in timely manner per Condition 21	The Department issued Compliance letter No. 17-R0474-37-0001 dated 03/20/2017. Related PDs see Nos. 2, 4, 9 Permittee discovered CATOX inlet and pressure sensor readings are outside manufacturer's specifications. Corrective Action included insulating the pipe between the compressor and the CATOX sensors to ensure inlet temperature is within the correct range.

Source Tests.
Permit No. AQ1385MSS01, required the Permittee to submit vendor data or conduct an initial performance test per 40 C.F.R. 60 Subpart JJJJ for EUs 1-3.

- On September 29-30, 2016, EUs 1a and 1b initial NOx, CO, VOC performance test was conducted. EUs 2 and 3 were scheduled to be tested during the same week, however, BlueCrest discovered the temperature and pressure sensors for the oxidation catalyst (CATOX) were not installed for these EUs and subsequently had to re-schedule testing for these engine.

Table 7 – Source Test Results EUs 1a and 1b

AQ1385MSS01			**Emission Units**	
Pollutant	**Subpart JJJJ Limit**	**Permit Limit**	**1**	**2**
NOx	1.0 g/hp-hr		0.10 g/bhp-hr	0.20 g/bhp-hr
CO	2.0 g/hp-hr	1.0 g/hp-hr	0.18 g/bhp-hr	0.21 g/bhp-hr
VOC	0.7 g/hp-hr		0.03 g/bhp-hr	0.05 g/bhp-hr

- On January 12, 2017, EUs 2 and 3 initial NOx, CO, VOC performance test was conducted.

Table 8 – Source Test Results EUs 2 and 3

AQ1385MSS01, Rev 3			**Emission Units**	
Pollutant	**Subpart JJJJ Limit**	**Permit Limit**	**2**	**3**
NOx	1.0 g/hp-hr		0.27 g/bhp-hr	0.26 g/bhp-hr
CO	2.0 g/hp-hr	1.0 g/hp-hr	0.082 g/bhp-hr	0.081 g/bhp-hr
VOC	0.7 g/hp-hr		0.29 g/bhp-hr	0.25 g/bhp-hr

XI. Compliance Issues:

According to Permit Nos. AQ1385MSS01, AQ1385MSS02 and Alaska Air Quality Control Regulations, the stationary source was operating out of compliance during this FCE review period as follows:

Table 9 – Compliance Issues

Permit	Condition	Non-Compliance Findings
AQ1385MSS01		
	Condition 21	BlueCrest failed to report in a timely manner the 1H15 FOR
	Condition 25	BlueCrest failed to comply with Condition 21 therefore, they are out of compliance with Condition 25.
AQ1385MSS01, Rev 2		
	Condition 39	BlueCrest failed to report in a timely manner the Source Test 10 day Notification
	Condition 9.1	BlueCrest failed to construct and maintain vertical, uncapped exhaust stacks for all EUs listed in Table 1 including: EUs 1a & 1b. These EUs had a horizontal stack configuration from time of installation (March 31, 2016) through time of discovery by the Department, and correction made February 2017.
	Condition 13	BlueCrest failed to limit EU 14 previous 12-month cumulative total volume of gas consumed to no more than 50 MMscf.
	Condition 14	BlueCrest failed to install, operate and maintain a catalytic oxidation (CATOX) emissions control device for EUs 1-3, 7-9; BlueCrest failed to obtain the manufacturer's specified operating range for inlet temperature and pressure drop, and include a copy in the operating report for the period that covers the 30th day after the EUs become fully operational.
	Condition 16	BlueCrest failed to install, operate and maintain a catalytic oxidation (CATOX) emissions control device for EUs 1-3, 7-9; BlueCrest failed to obtain the manufacturer's specified operating range for inlet temperature and pressure drop, and include a copy in the operating report for the period that covers the 30th day after the EUs become fully operational.
	Condition 17	BlueCrest failed to comply with Condition 14, and 16, by not installing temperature sensing devices and controls to monitor the pressure drop across each CATOX. Therefore, BlueCrest was unable to maintain, report: pressure drop, daily minimum and maximum inlet gas temperature of each CATOX.
	Condition 26	BlueCrest failed to comply with Condition 39, therefore, they are out of compliance with Condition 26.
AQ1385MSS01, Rev 3		
	Condition 6.1	BlueCrest failed to provide a certified manufacturer's guarantee prior to unit becoming fully operational; or conducting a Method 9 VE observation within 30 days after the unit (EUs 15 and 16) became fully operational.
	Condition 9.1	BlueCrest failed to construct and maintain vertical stacks as required in the permit
	Condition 9.2	BlueCrest failed to limit concurrent operation of EUs 17-21 to no more than 4 rig engines.
	Condition 9.3	BlueCrest failed to limit cumulative horsepower rating 7,390 bhp; and provide documentation of all NREs operating at facility
	Condition 10.1	BlueCrest failed to provide fuel receipts, fuel log with amount and type of fuel in the 2H16 and 1H17 FOR.
	Condition 11	BlueCrest failed to comply with Condition 14, therefore, they are out of compliance with Condition 11.
	Condition 14	BlueCrest failed to limit EU 13 previous 12-month cumulative total volume of gas consumed to no more than 50 MMscf.
	Condition 15	BlueCrest failed to install, operate and maintain a catalytic oxidation (CATOX) emissions control device for EUs 2 and 3; BlueCrest failed to obtain the manufacturer's specified operating range for inlet temperature and pressure drop, and include a copy in the operating report for the period that covers the 30th day after the EUs become fully operational.
	Condition 16	BlueCrest failed to comply with Condition 15, by not installing temperature sensing devices and controls to monitor the pressure drop across each CATOX. Therefore, BlueCrest was unable to maintain, report: pressure drop, daily minimum and maximum inlet gas temperature of each CATOX.

	Condition 21	BlueCrest failed to report/submit EE/PDs in a timely manner
	Condition 22	BlueCrest failed to provide fuel receipts, and information about fuel grade/amounts per each shipment of fuel in the 2H16 and 1H17 FORs.
	Condition 26	BlueCrest failed to comply with Conditions 6.1, 9.1, 9.2, 9.3, 15, 16 and 22, therefore, they are out of compliance with Condition 26.
AQ1385MSS02		
	Condition 10.1	BlueCrest failed to provide fuel receipts, fuel log with amount and type of fuel in the 1H17 FOR.
	Condition 25	BlueCrest failed to comply with Condition 10.1b and c, therefore, they are out of compliance with Condition 25.

XII. Conclusion:

As a result of the Department's Air Quality FCE conducted with an on-site inspection, the Department found non-compliance issues with the requirements of Permit Nos. AQ1385MSS01, **AQ1385MSS02**, and Alaska Air Quality Control Regulations.

ADEC DIVISION OF AIR QUALITY PHOTOLOG

BlueCrest Operating Alaska, LLC – Cosmopolitan Project
Photographs taken **08/1/2017** by ADEC Inspector **Kolena Momberger** using a **Panasonic DMC-FZ40 digital camera**
Photo-log created by ADEC Inspector **Kolena Momberger**

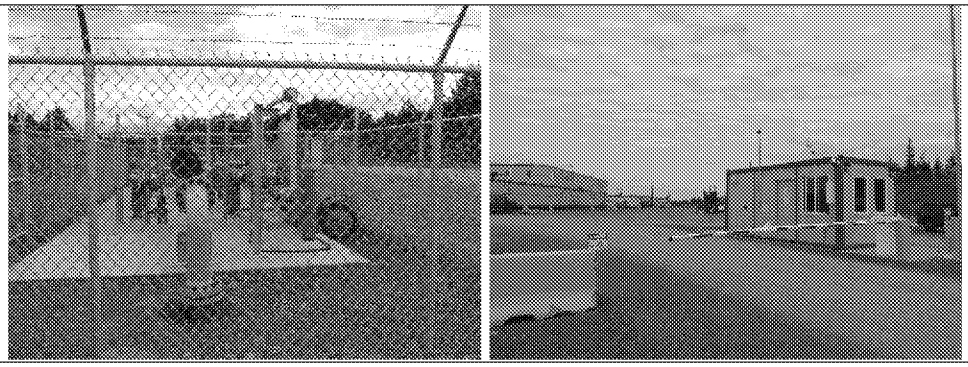
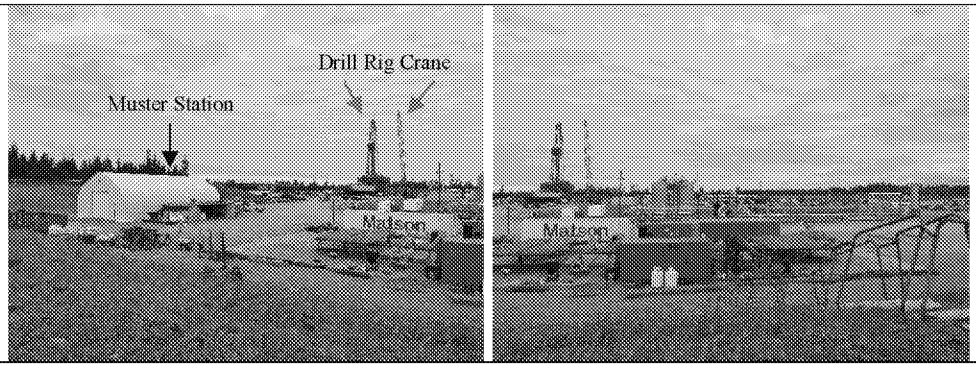
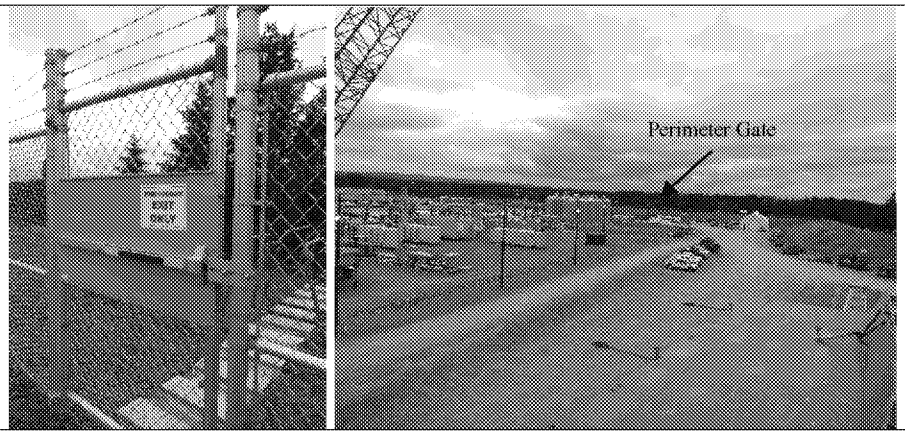
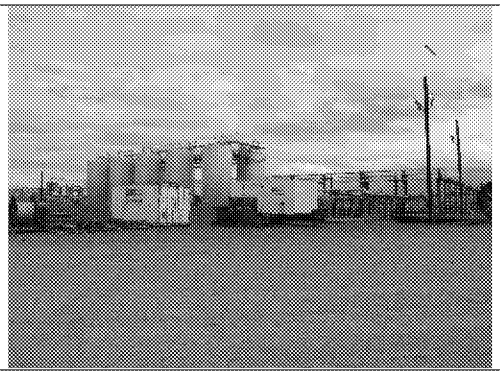
Photo 1 and 2: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: **AQ1385MSS01/02** Overview of Enstar and H_2S sampling site just outside BlueCrest fence line/guard shack	
Photo 3 and 4: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Overview of BlueCrest looking northeast from perimeter fence-line	
Photo 5 and 6: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 One of Four perimeter exit gates From Drill Rig looking towards the Muster Station and perimeter fence-line where took photo of fence gate	
Photo 7: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 GBC Contractor equipment GBC is one of many contractors on-site with various types of non-road, portable equipment.	

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Photo-log created by ADEC Inspector **Kolena Momberger**

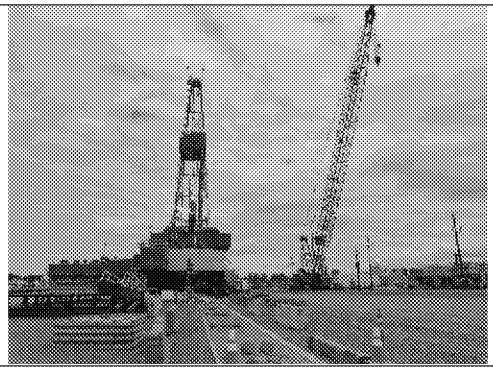
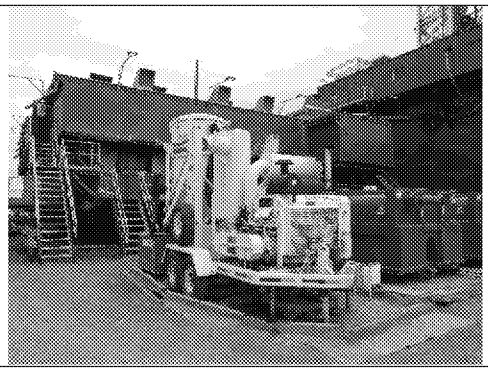
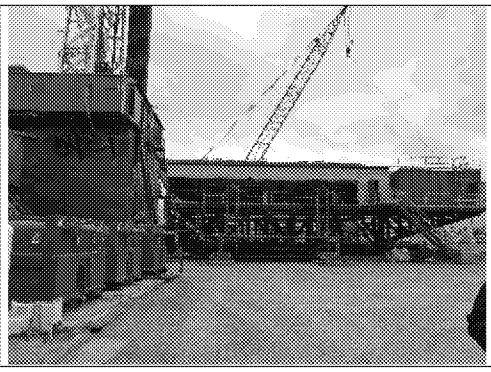
Photo 8 and 9: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Overview looking north of the BlueCrest Drill Rig and Contractor operated Crane	 
Photo 10 and 11: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Mud pump engine BlueCrest Drill Rig # 1 Utility/Mud, drill rig floor and pipe modules	 
Photo 12: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Overview of Mud/Engine sections of Drill Rig with EUs 17-21 Drill Rig stacks and EU 49 Boiler Stack	

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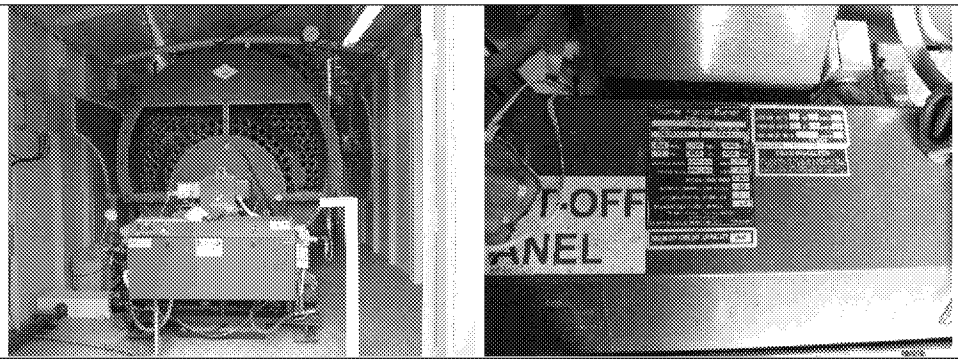
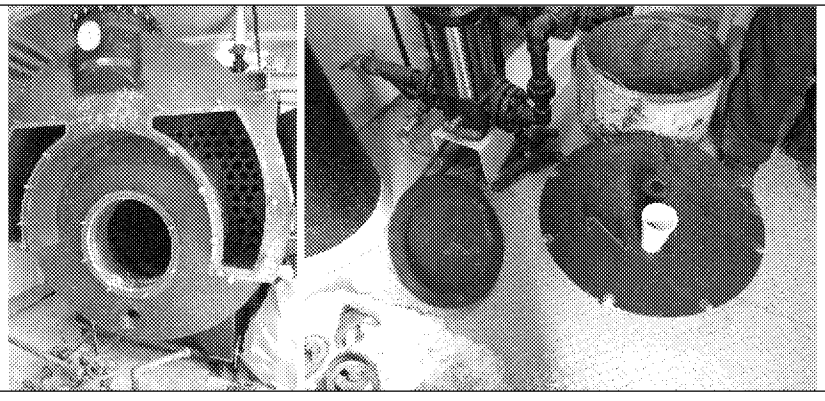
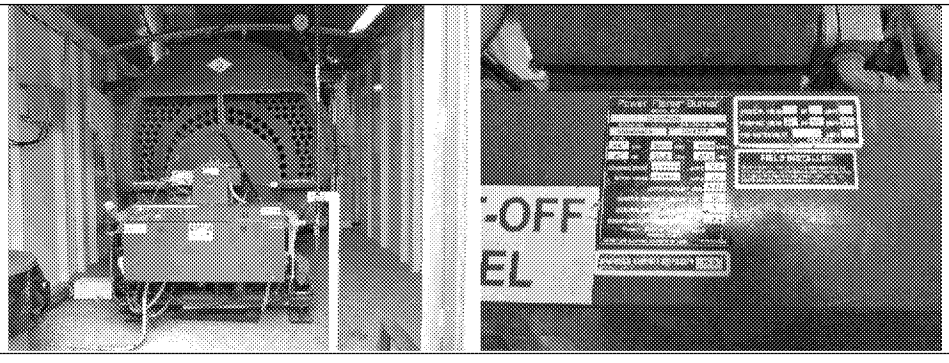
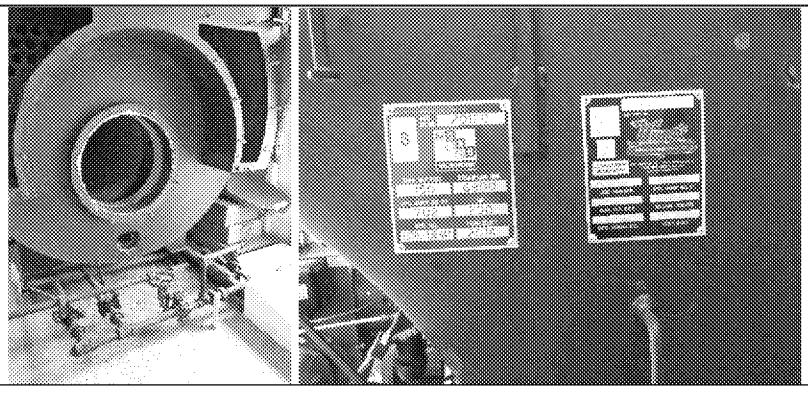
Photo 13 and 14: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 49 ODR-9 Boiler 1 Hurst Power Flame Duel Fired boiler and data information plate	
Photo 15 and 16: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 49 undergoing maintenance	
Photo 17 and 18: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 50 ODR-10 Boiler 2 Hurst Power Flame Duel Fired boiler and data information plate	
Photo 19 and 20: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 50 from back and side open for inspection/maintenance	

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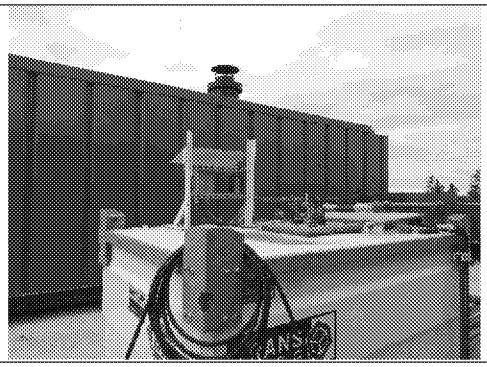
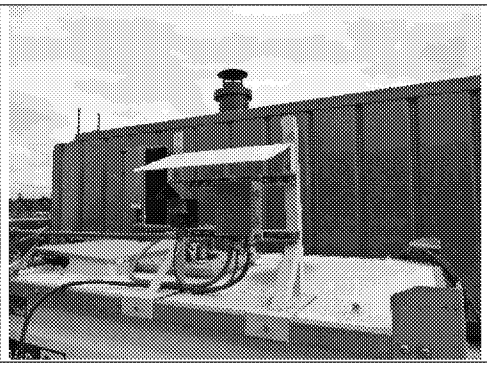
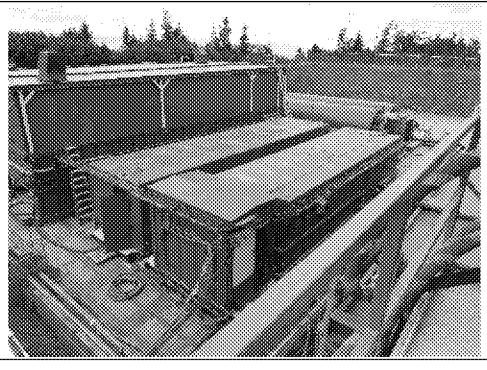
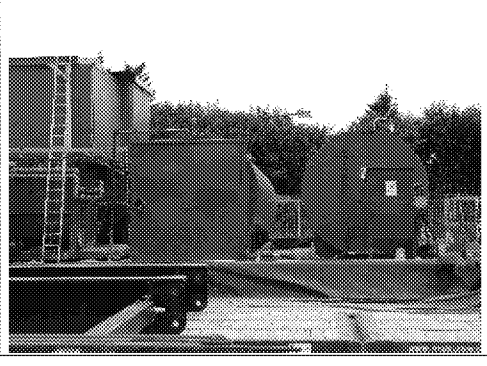
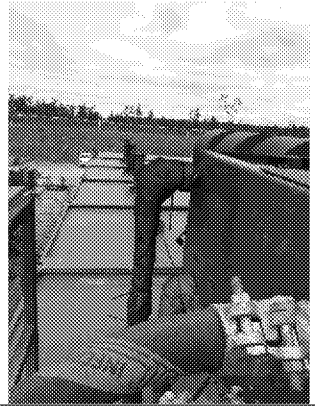
Photo-log created by ADEC Inspector **Kolena Momberger**

Photo 21 and 22: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 49 and 50 Boiler Stacks	 
Photo 23: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Daily Motors Report, inspection and log book	
Photo 24 and 25: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Red Fuel Day tanks and equipment for the Drill Rig – different angles	 
Photo 26: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EUs 17-21 Stacks and Drill Rig condensate tank	

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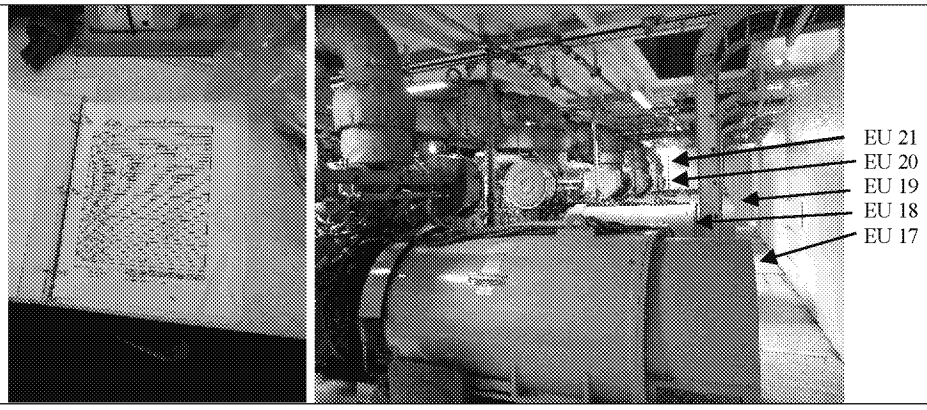
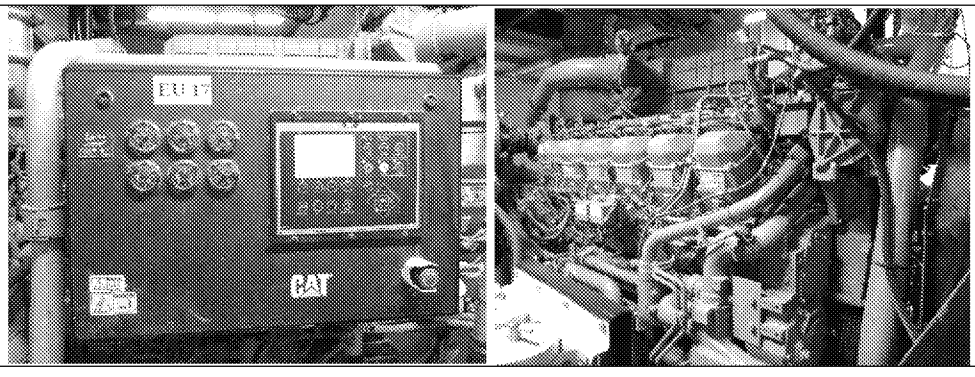
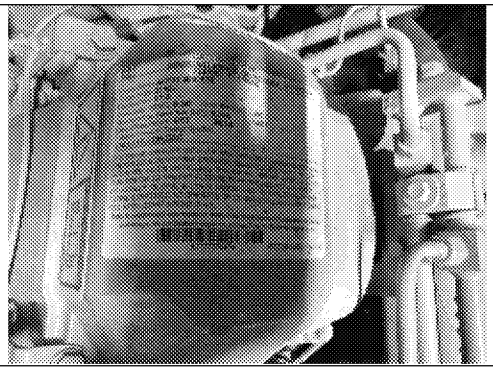
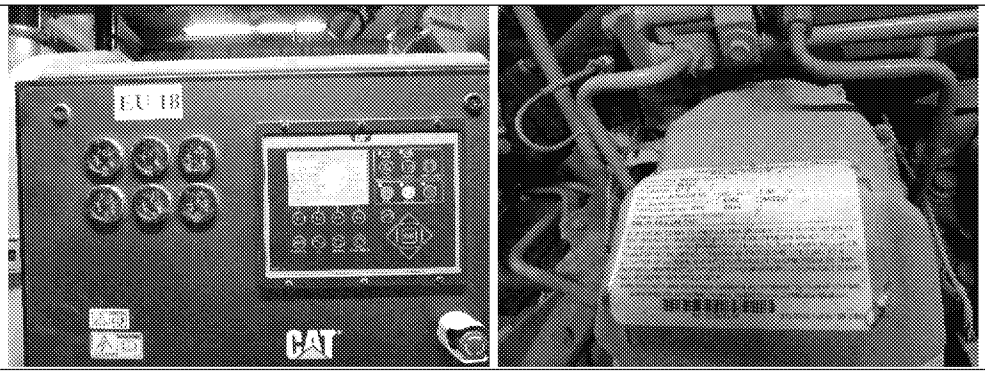
Photographs taken **08/1/2017** by ADEC Inspector **Kolena Momberger** using a **Panasonic DMC-FZ40 digital camera**
Photo-log created by ADEC Inspector **Kolena Momberger**

Photo 27 and 28: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EUs 17-21 Engine Log EUs 17-21 lined up on Drill Rig	
Photo 29: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 17 ODR-3 (Rig Engine 1) CAT 3512C 1476 bhp rated engine	
Photo 30: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 17 CAT 3512C data plate information ACPXL 106.T2E, 2014, Serial No. LLA04734	
Photo 31 and 32: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 18 ODR-4 (Rig Engine 2) CAT 3512C 1476 bhp rated engine ACPXL 106.T2E, 2014, Serial No. LLA04731	

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BlueCrest Operating Alaska, LLC – Cosmopolitan Project
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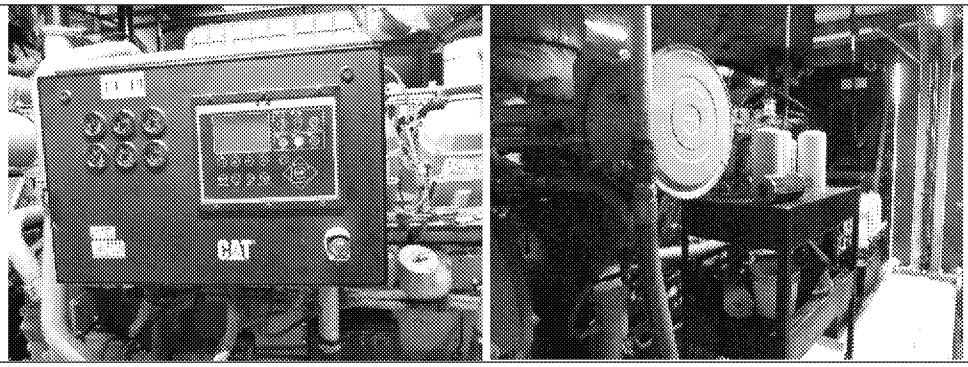
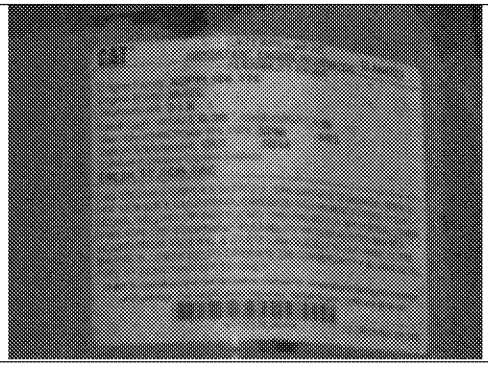
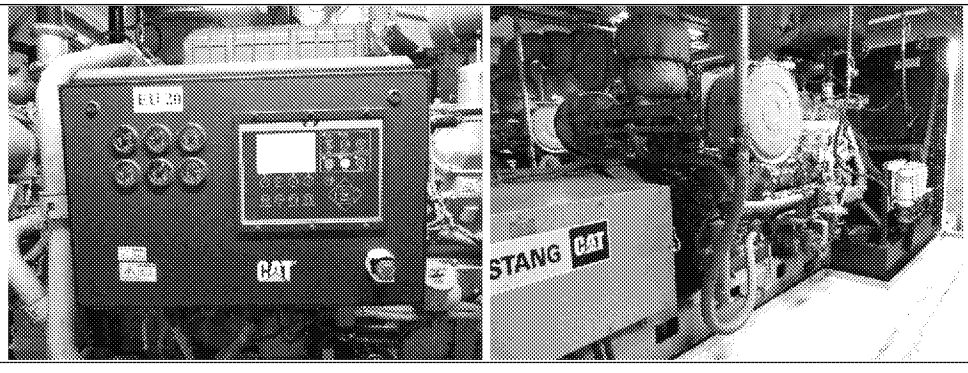
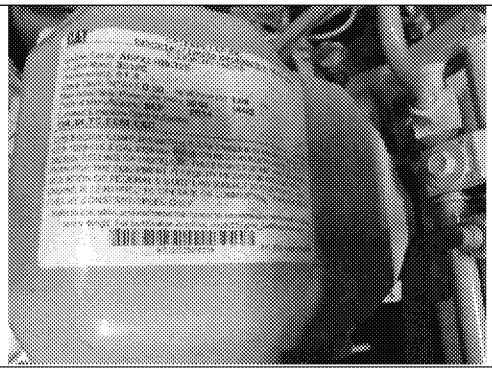
Photo 33: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 19 ODR-5 (Rig Engine 3) CAT 3512C 1476 bhp rated engine different angles	
Photo 34: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 19 CAT 3512C data plate information ACPXL 106.T2E, 2014, Serial No. LLA04721	
Photo 35 and 36: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 20 ODR-6 (Rig Engine 4) CAT 3512C 1476 bhp rated engine different angles	
Photo 37: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 20 CAT 3512C data plate information ACPXL 106.T2E, 2014, Serial No. LLA04722	

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Photo-log created by ADEC Inspector **Kolena Momberger**

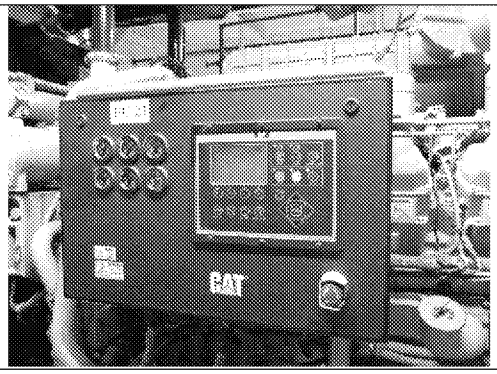
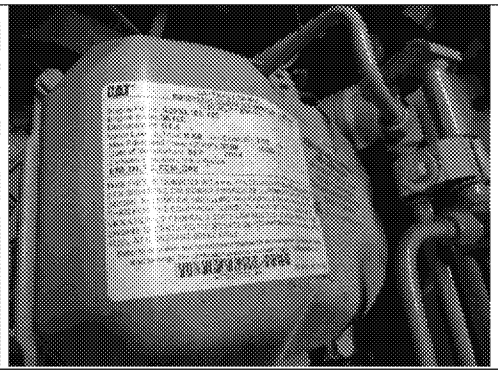
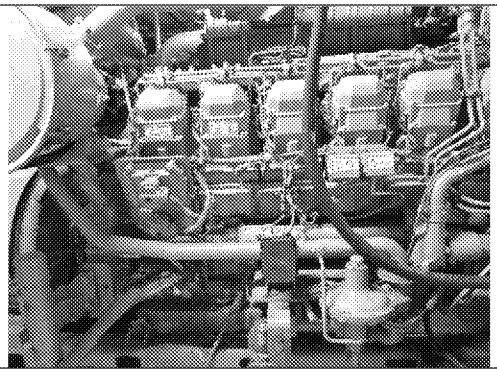
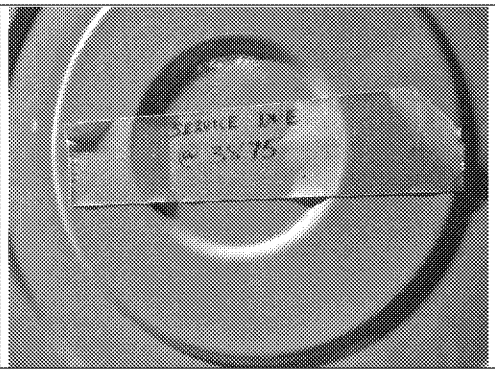
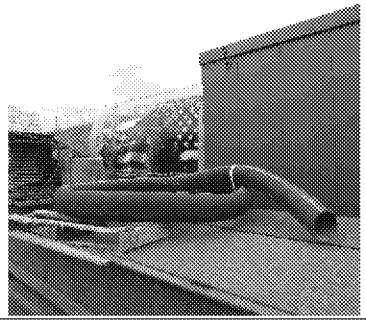
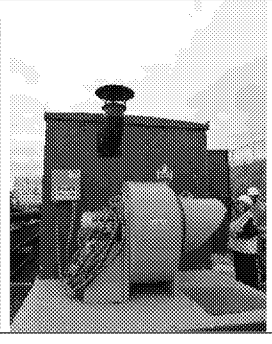
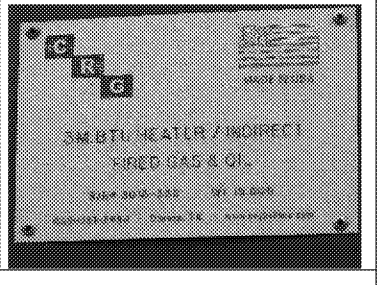
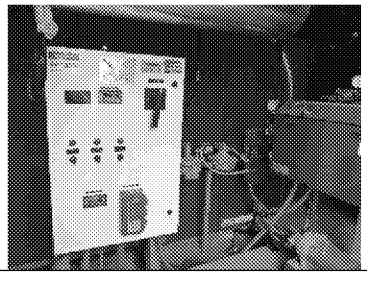
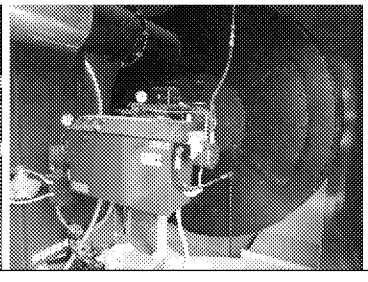
Photo 38 and 39: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 21 ODR-7 (Rig Engine 5) CAT 3512C 1476 bhp rated engine ACPXL 106.T2E, 2014, Serial No. LLA04617	 
Photo 40 and 41: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 21 CAT 3512C different angles	 
Photo 42, 43, and 44: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 16 ODR-1 Hot Air Heater 2 Dragon Fire 3 MMBtu/hr duel fired Heater data plate, stack, outside structure	  
Photo 45, 46, and 47: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 16 ODR-1 Hot Air Heater 2 Control panel, hour meter different angles	  

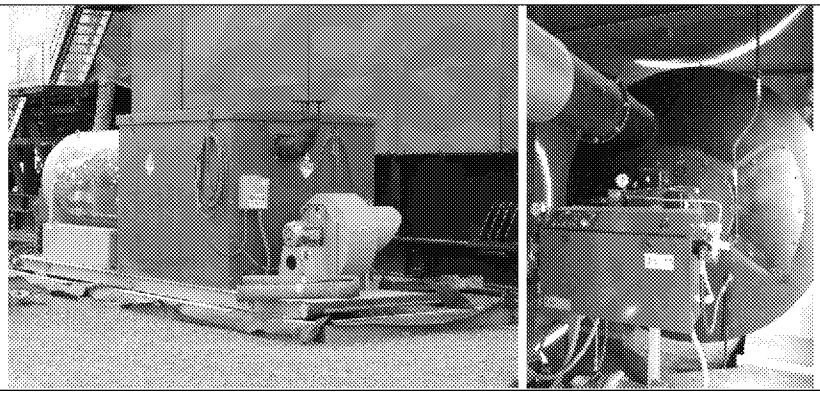
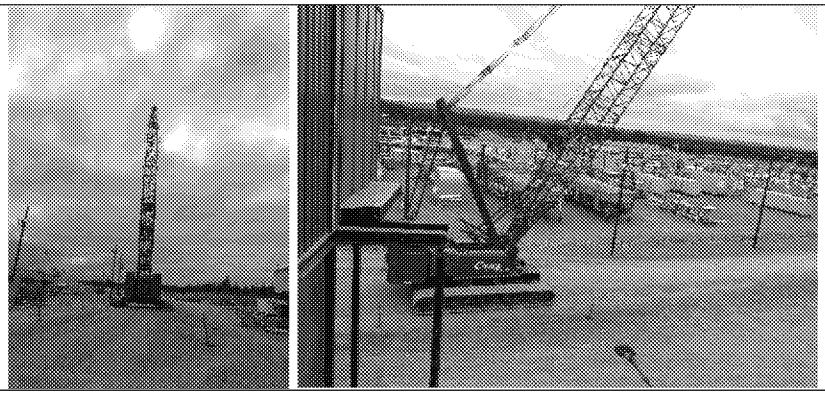
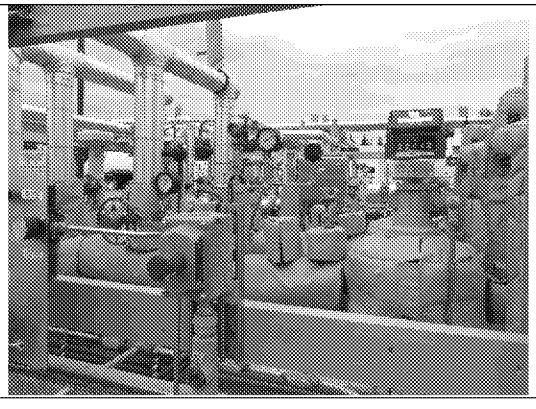
Photo 48 and 49: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 15 ODR-1 Hot Air Heater 1 Dragon Fire 3 MMBtu/hr duel fired Heater different angles	
Photo 50 and 51: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 22 ODR-8 Kohler Cold Start 10 hp Yanmar Engine different angles	
Photo 52 and 53: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Crane engine from different angles	
Photo 54: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Fuel Monitoring Valves for Crude Oil dispensing	

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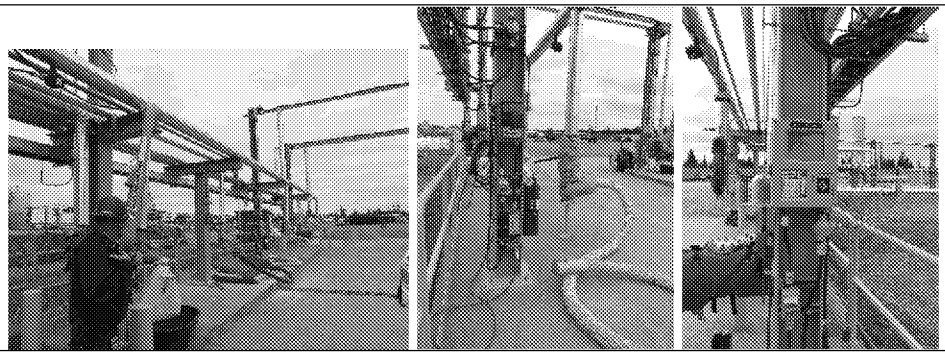
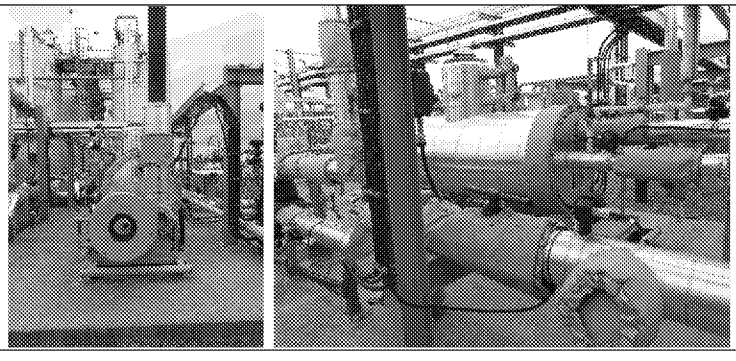
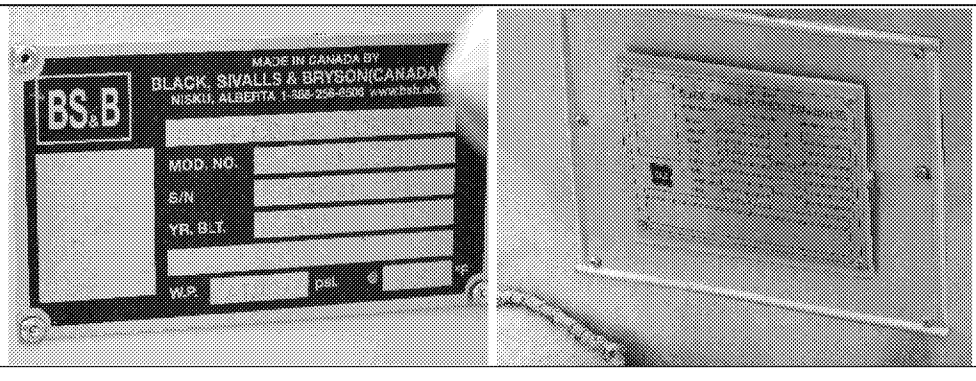
Photo 55 and 56: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 11 Vapor Combustor (VCU) Abutec 20 20.5 MMBtu/hr	
Photo 57, 58, and 59: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 48 Truck Loading Rack Has 2 arms for Crude oil and 1 arm for produced water Close-up of scully system	
Photo 60 and 61: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 51 Offspec Oil Tank Heater BS&B ProFire 2100E front and side	
Photo 62 and 63: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 51 Oil Tank Heater data plates	

ADEC DIVISION OF AIR QUALITY PHOTOLOG

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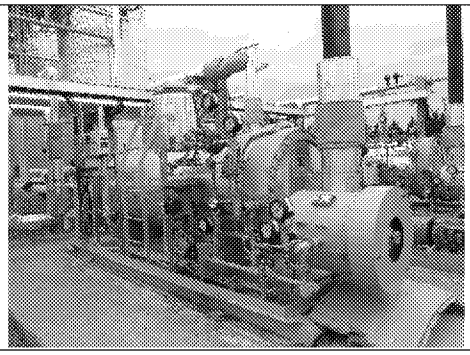
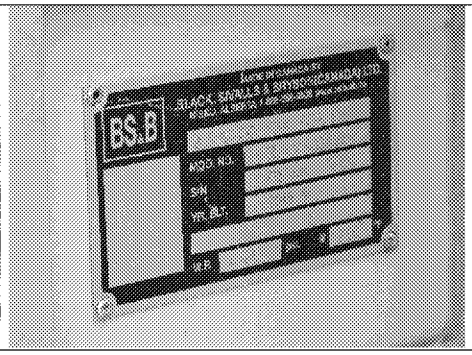
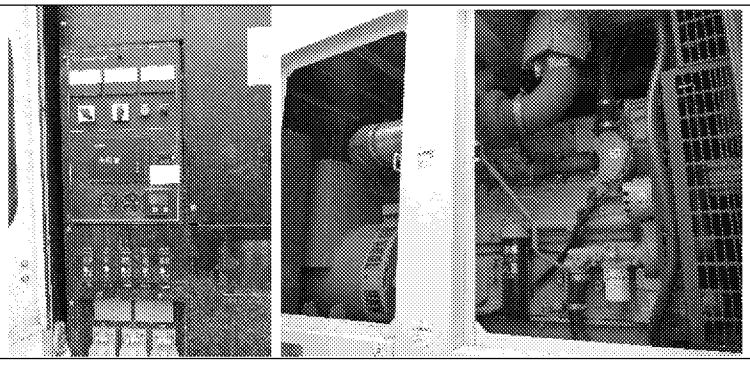
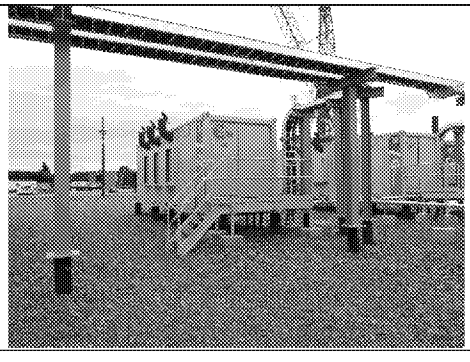
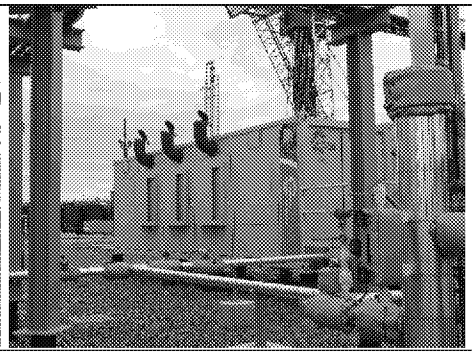
Photo 64 and 65: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 6 Backup Oil Tank Heater BS&B ProFire 2100E from side and data plate	 
Photo 66 and 67: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 EU 10 Back up diesel generator (listed as a CAT XQ375) On site this unit was Identified as EU which is an Ingersoll Rand with a Cummins Engine # 79434318, Model QSX15-G9, rated continuous power 475 hp	 
Photo 68 and 69: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 10 Control Panel with 3100.1 hours on meter, and side view of engine	
Photo 70 and 71: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EUs 7, 8, 9 Capstone C600 Microturbine generator housing/stacks	 

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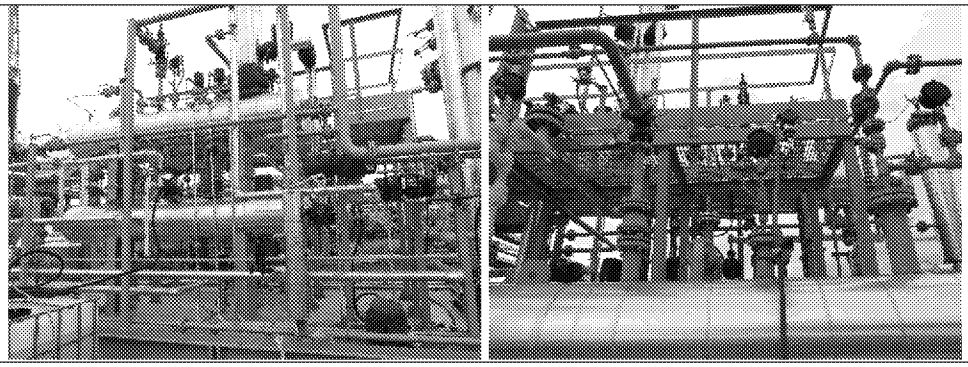
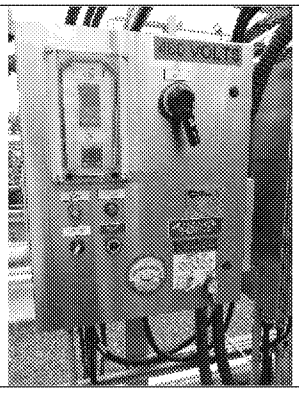
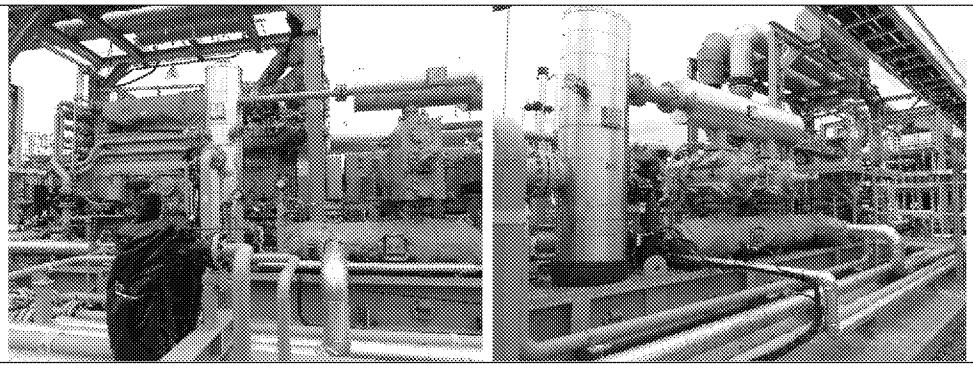
Photo 72 and 73: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 12 BS&B TEG Reboiler from different angles	
Photo 74: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 12 Control Panel Model: SCRR4Z-48A-401C-U2 Serial: S22479	
Photo 75 and 76: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 3 CAT G3608 Backup Gas Compressor with CATOX from side	
Photo 77, 78, and 79: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 3 Stack with Crane and Drill Rig in background, preparing the EU for maintenance, and draining fluid	

ADEC DIVISION OF AIR QUALITY PHOTOLOG

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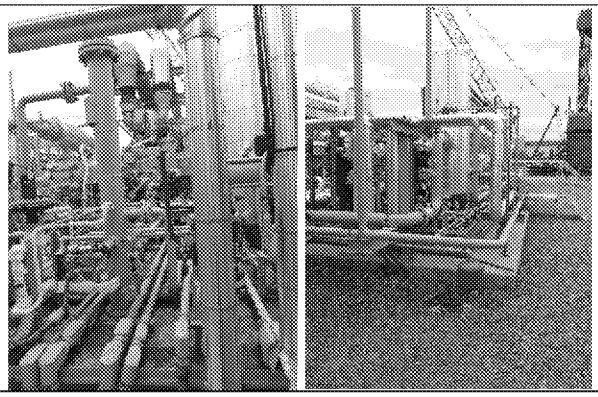
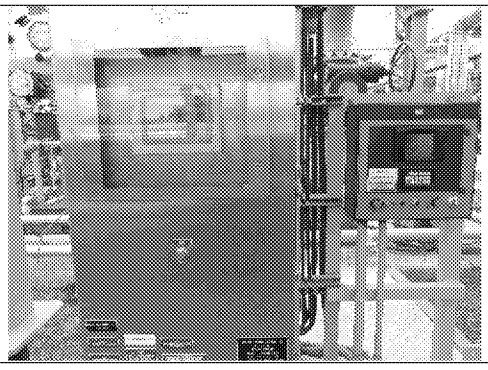
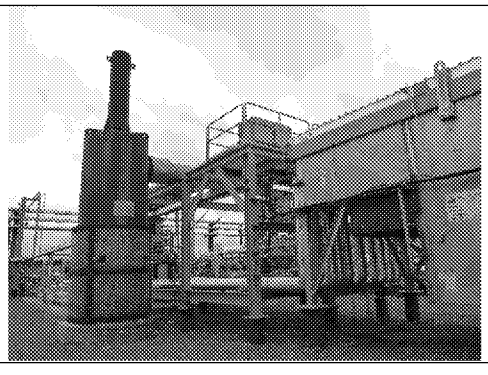
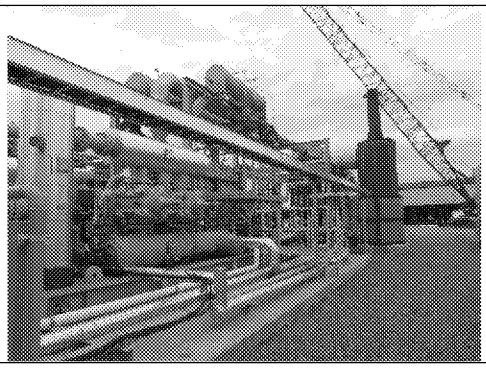
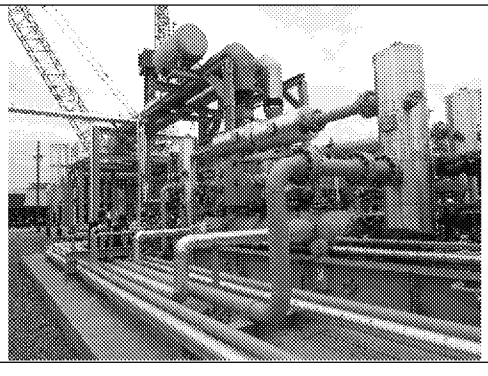
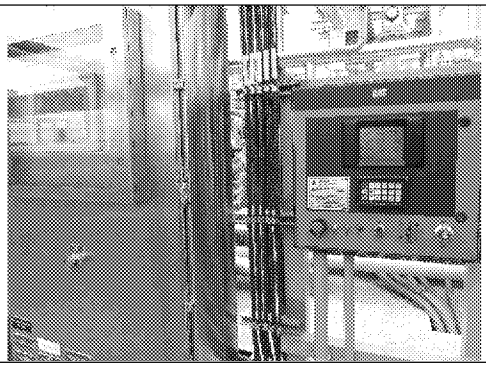
Photo 80 and 81: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 3 from different angles during maintenance	
Photo 82: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 3 Control Panels	
Photo 83 and 84: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 2 3 CAT G3608 Gas Compressor with CATOX stack and from different angles	 
Photo 85 and 86: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 2 from side and control panel	 

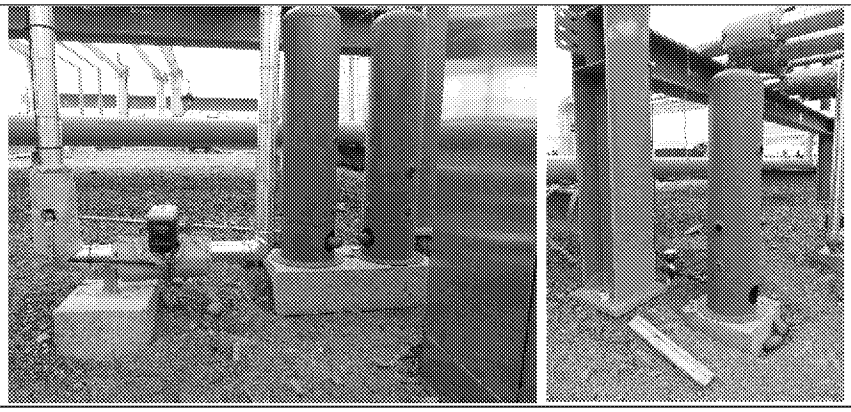
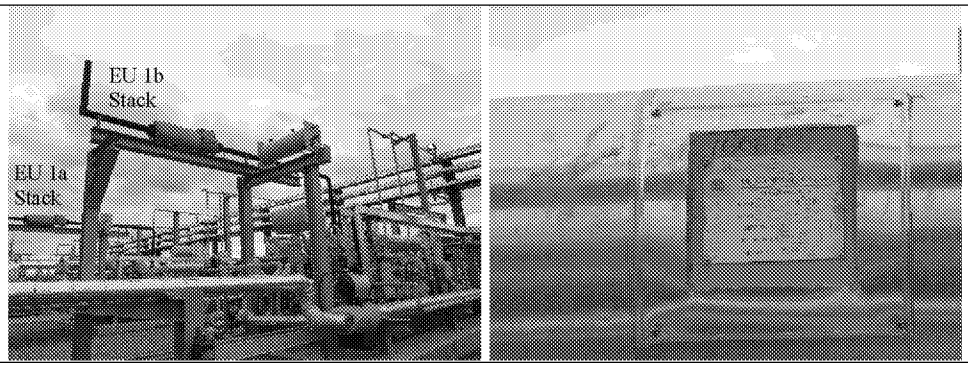
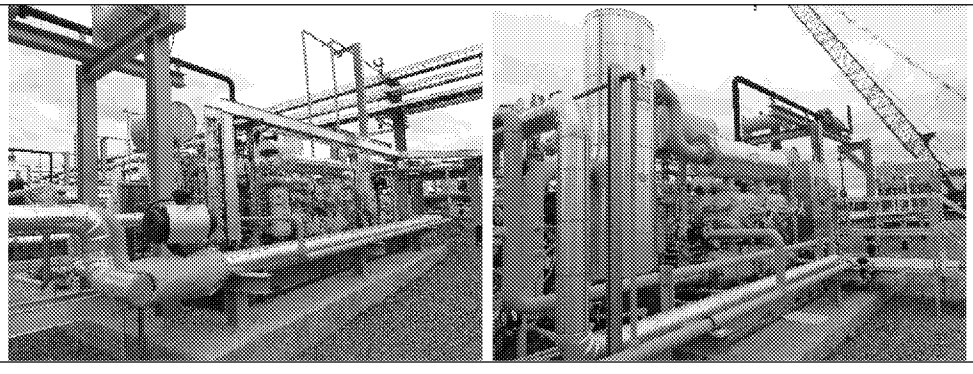
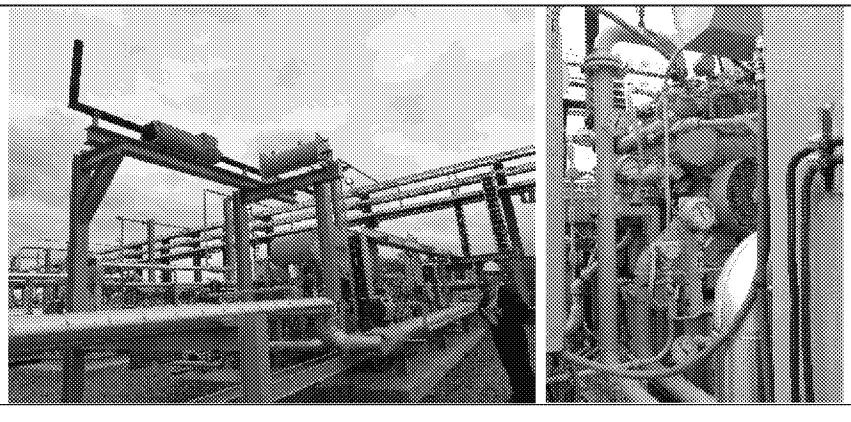
Photo 87 and 88: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 2 and 3 Verification of corrective measures taken to help prevent condensation in the lines	
Photo 89 and 90: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 1b CAT 3406TA 2100 LP Compressor with stack and data plate	
Photo 91 and 92: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 1b from different angles	
Photo 93 and 94: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 1a CAT 3406TA 2100 LP Compressor with stack and different angle	

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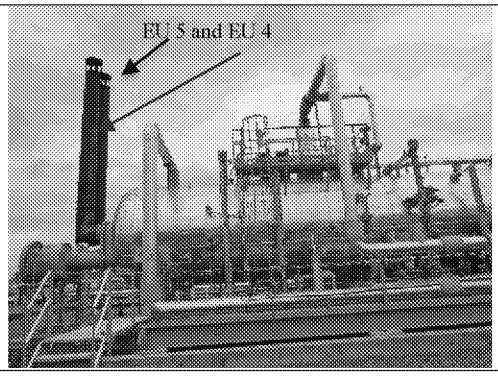
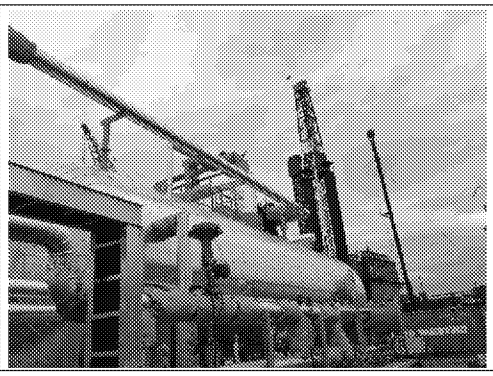
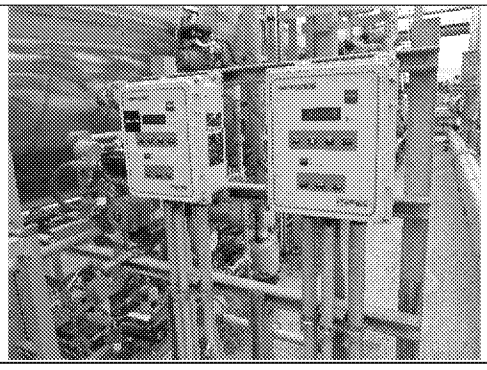
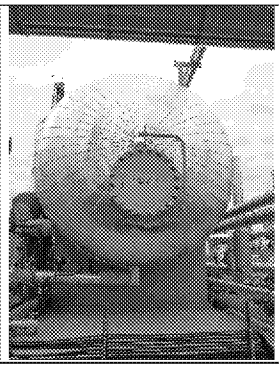
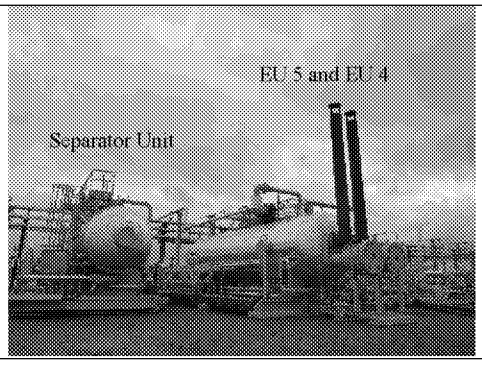
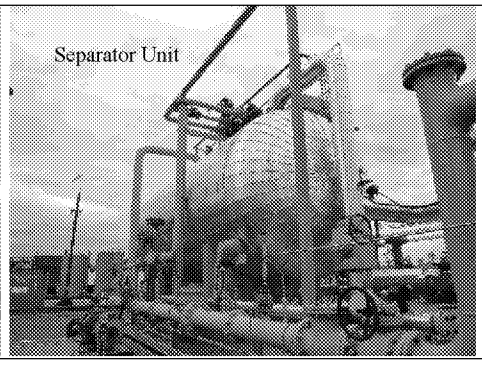
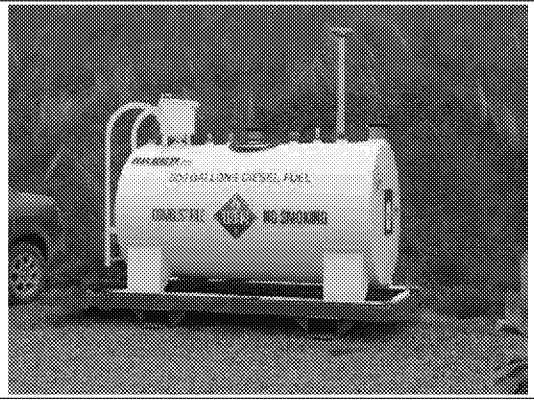
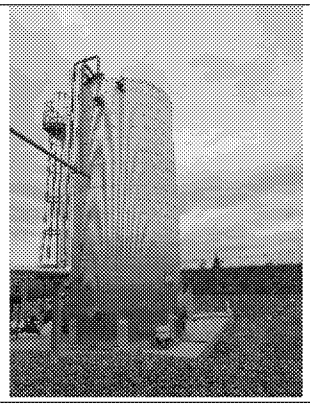
Photo-log created by ADEC Inspector **Kolena Momberger**

Photo 95 and 96: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Crude Oil Heater A (EU 4) & B (EU 5) from different angles BS&B ProFire 2100 4.5 MMBtu/hr	 
Photo 97 and 98: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EUs 4 and 5 control panels EU 5 looking towards the stack & drill rig in background	 
Photo 99 and 100: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EUs 4 and 5 next to separator unit	 
Photo 101 and 102: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Diesel fuel day tank Wastewater Tower – known H_2S area	 

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BlueCrest Operating Alaska, LLC – Cosmopolitan Project
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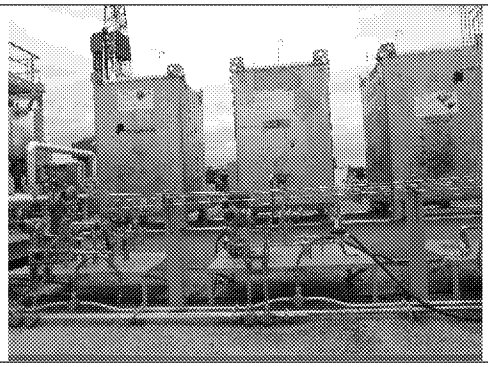
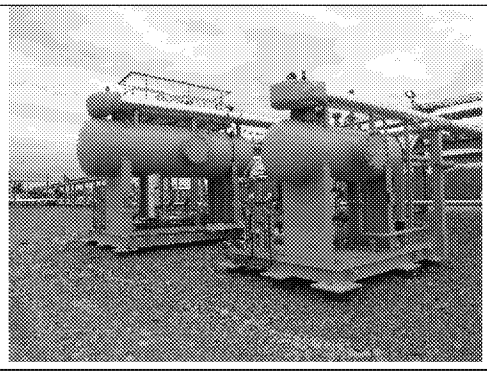
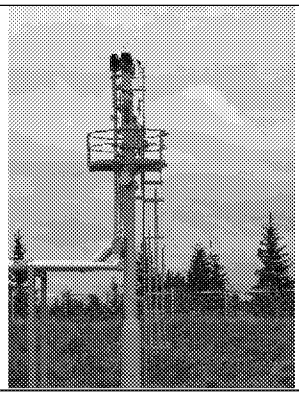
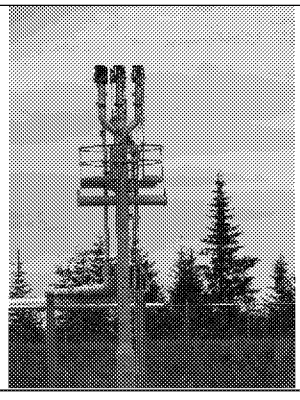
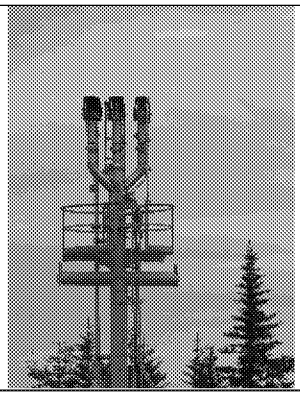
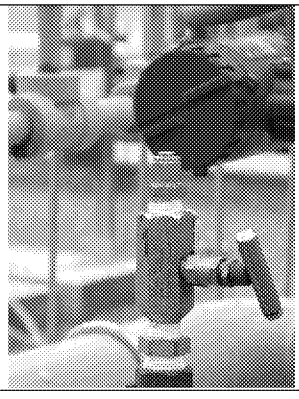
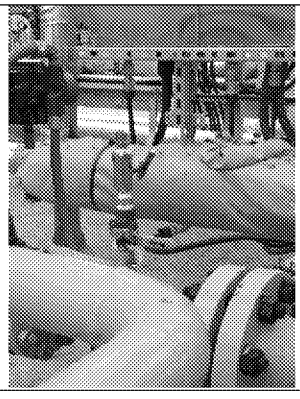
Photo 103 and 104: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Production Fluid tanks from different angles	 
Photo 105 and 106: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 13 Flare knockout scrubbers from different angles. Large one is for High Pressure Flare, and small one is for Low Pressure Flare	 
Photo 107, 108, and 109: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 13 GBA Corona High (CSF-3/8-VSF) and Low (PF-4) Pressure Flare system from different angles/close-up	  
Photo 110 and 111: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 H_2S sampling port located near EU 12	 

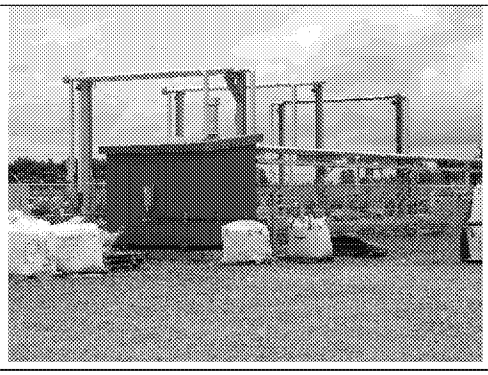
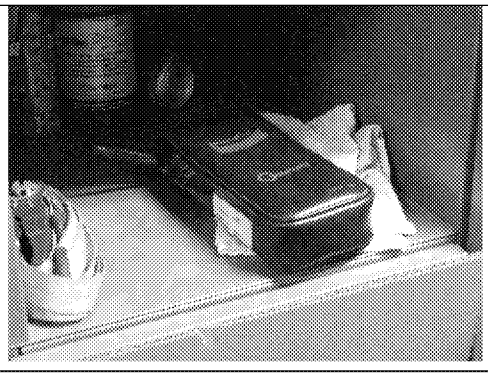
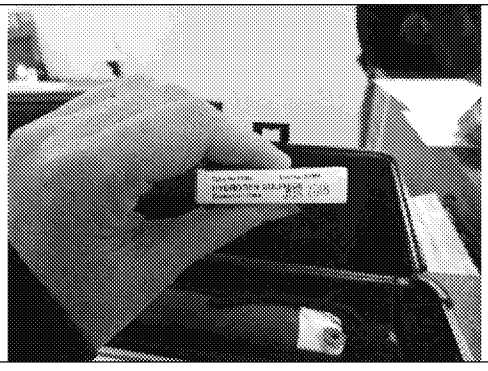
Photo 112 and 113: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 **Overview:** 1. some of the remaining equipment used for fracking; 2. Misc. Non-road Engines/equipment	 
Photo 114 and 115: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Stack for Burnham 810H 0.505 MMBtu/hr boiler – currently not listed in permit inventory Overview of the Camp	 
Photo 116 and 117: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 H_2S sampling kit and Sample tubes onsite are expired. Expiration dates ranged from February 2013 to March 2017.	 
Photo 118 and 119: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 H_2S sampling kit with Sample tubes with an expiration date of June 2018.	 

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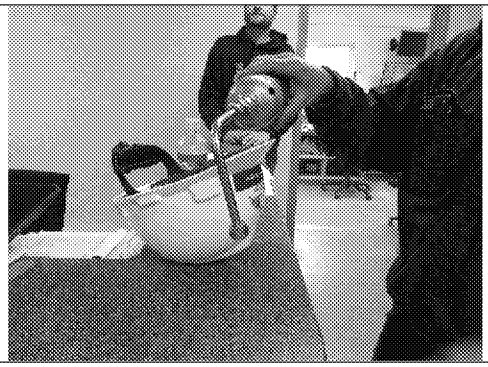
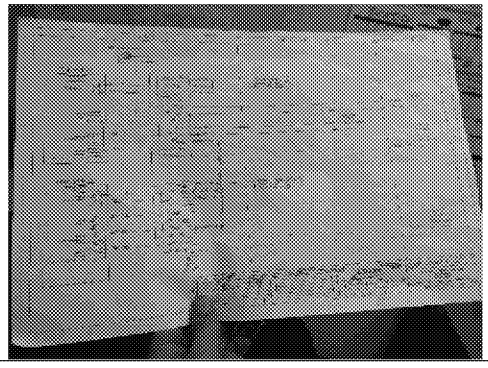
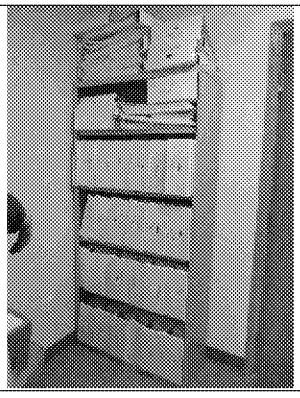
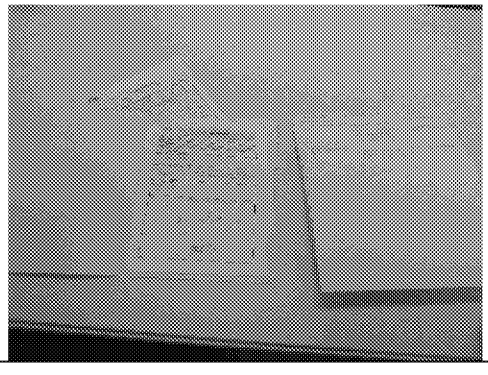
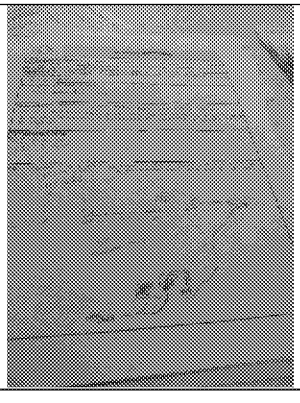
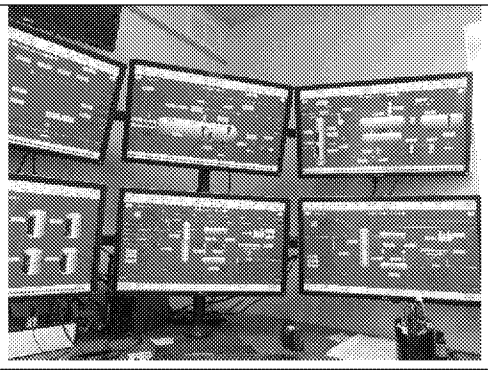
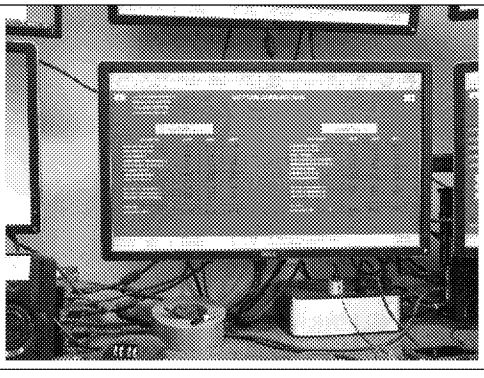
Photo 120: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 H_2S sample equipment used to connect to the sample port	
Photo 121 and 122: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU 48 "As built" drawing EU Owner/Operator Manuals	 
Photo 123 and 124: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 EU Maintenance performed file folders for record review EU 13 Flare HP scrubber	 
Photo 125 and 126: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Facility wide SCADA Monitoring System EUs 7, 8, 9 Capstone Microturbine SCADA	 

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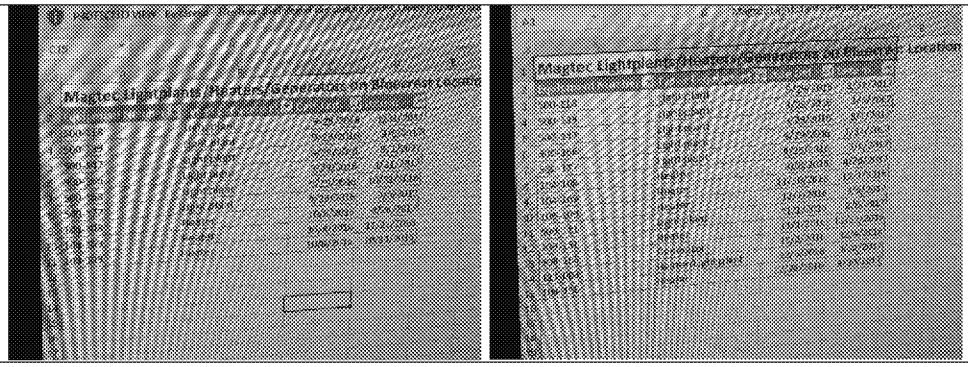
Photo 127 and 128: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 Non-road Engine (NRE) contractor log	
Photo 129 and 130: BlueCrest Alaska Operating Cosmopolitan Project 08/1/17 Permit: AQ1385MSS01/02 NRE Frac equipment logs